Library of the Marine Corps
3000180250
OS
79.72
Q6
1993

U.S. MAR[illegible]THE PERSIAN GULF, 1[illegible]1991: WITH THE MARINE EXPEDITIONARY FORCE IN DESERT SHIELD AND DESERT STORM

8-12

HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
WASHINGTON, D.C.

COVER: Men of Company G, 2d Battalion, 7th Marines, prepare to clear trenchlines and bunkers at the southern perimeter of Al Jaber Air Field on 26 February 1991.

MARINE CORPS UNIVERSITY

U.S. Marines in the Persian Gulf, 1990-1991

WITH THE I MARINE EXPEDITIONARY FORCE IN DESERT SHIELD AND DESERT STORM

DIRECTOR MCRC
ATTN COLLECTIONS MGT C40RCL
MCCDC
2040 BROADWAY STREET
QUANTICO VA 22134-5107

by
Colonel Charles J. Quilter II
U.S. Marine Corps Reserve

HISTORY AND MUSEUMS DIVISION
HEADQUARTERS, U.S. MARINE CORPS
WASHINGTON, D.C.

1993

MARINE CORPS UNIVERSITY LIBRARY

#28365610
IS
.Q6
QMCA

Other Publications in the Series
U.S. Marines in the Persian Gulf, 1990-1991

U.S. Marines In the Persian Gulf, 1990-1991: Anthology and Bibliography 1991

In Preparation

With the 1st Marine Division in Desert Shield and Desert Storm

With the 2d Marine Division in Desert Shield and Desert Storm

With the 3d Marine Aircraft Wing in Desert Shield and Desert Storm

Marine Forces Afloat in Desert Shield and Desert Storm

Operation Provide Comfort:
U.S. Marine Corps Humanitarian Relief Operations in Northern Iraq, 1991

Foreword

With I Marine Expeditionary Force in Desert Shield and Desert Storm is the work of one historian who viewed the conflict from the perspective of I MEF headquarters. We invite comment, amplification, and correction.

This monograph is a preliminary accounting of the role of the U.S. Marine Corps' senior command in the Persian Gulf conflict from 8 August 1990 to 16 April 1991. It is one of a series covering the operations of the 1st Marine Division; the 2d Marine Division; the 3d Marine Aircraft Wing; Combat Service Support Element, comprised of 1st and 2d Force Service Support Groups units; Marines afloat in Desert Shield and Desert Storm; and humanitarian relief operations in northern Iraq and Turkey.

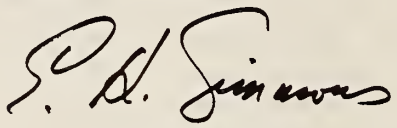
When the History and Museums Division began the historical collection effort concerning Marine activities in the Persian Gulf area, it called upon the members of Mobilization Training Unit (History) DC-7, which Colonel Charles J. Quilter II, USMCR, has commanded since 1989. This small organization of Individual Ready Reserve officers is the only Marine Corps unit that provides historians, combat artists, archivists, and museum specialists in support of History and Museums Division programs. Most of its members have classical military specialties and have subsequently gained in their civilian pursuits the additional qualifications necessary to serve in the unit. About half of these officers served in Vietnam. During the Persian Gulf conflict, seven of MTU DC-7's officers were on active duty and five served in the Gulf.

The first Marine Reserve historians to arrive in theater were Colonel Quilter and Lieutenant Colonel Charles H. Cureton, who landed in Saudi Arabia on 9 November 1990. Colonel Quilter was immediately designated Command Historian of I Marine Expeditionary Force by its commander, Lieutenant General Walter E. Boomer. Over the next five months, he crisscrossed the I MEF area of operations, witnessing events from the launching of the first Marine air strikes against Iraq on 17 January 1991 to the liberation of Kuwait City on 27 February 1991. During the process, he nursed an elderly laptop computer and assorted camera gear while putting more than 22,000 miles on several vehicles.

Colonel Quilter enlisted in the Marine Corps Reserve in 1960. After studying in Japan, he graduated from the University of California, Berkeley, having majored in East Asian history. He was commissioned in 1964. Designated an aviator in 1965, he served primarily as a F-4B Phantom pilot over the next four years. In Vietnam he flew 252 combat missions and became a flight commander. Other assignments included duties as a squadron operations officer, adversary pilot, and air combat intelligence officer

specializing in electronic warfare. After release from active duty, he served in the Selected and Individual Ready Reserve as a staff officer and pilot, flying OV-10 Broncos and A-4 Skyhawks. He also completed a number of service schools including the Command and Staff College and the National Defense University's National Security Management Program. Colonel Quilter commanded Marine Fighter Attack Squadron 134 at MCAS El Toro, California, in the mid-1980s. He joined MTU (Hist) DC-7 in 1986 when he wrote a soon-to-be published history of Marine Fighter Attack Squadron 531, the Corps' pioneer nightfighter unit. His current project is a monograph in this series about the 3d Marine Aircraft Wing in the Persian Gulf conflict. In civilian life, he is a captain for Delta Airlines. The author wishes to thank Lieutenant Colonels Cureton, Ronald G. Brown, and Dennis P. Mroczkowski for their assistance in Southwest Asia and in the preparation of this work.

Unless otherwise noted, the material in this monograph is based upon the command chronologies of I Marine Expeditionary Force, 1 August 1990-30 April 1991 (hereafter cited as I MEF ComdC), which are located in the Archives Section, Marine Corps Historical Center, Washington Navy Yard, Washington, D.C. 20374. Other primary sources include the I MEF Combat Operations Center journal, situation reports, transcripts and transparencies of the I MEF daily staff briefings, as well as notes taken and oral history interviews conducted by the author in his capacity as Command Historian, I MEF, 9 November 1990-8 April 1991. All such material is located in the I MEF file held at the Marine Corps Historical Center.



E. H. SIMMONS
Brigadier General
U.S. Marine Corps (Retired)
Director of Marine Corps History and Museums

Preface

On 2 August 1990, the date that Iraq invaded Kuwait, I happened to be camping with my family in a remote area in northern California. Emerging out of the wilderness a few days later, I learned of this event and sensed that involvement by Marines was imminent. Because the unit I commanded was the Corps' only unit of historians, I thought it likely we would be called upon as well. I contacted our operational sponsor, Brigadier General E. H. Simmons, Director of Marine Corps History and Museums. Although operational security was extremely tight, he averred that it might be a good idea to pack my seabag.

At that time the Corps had a policy of not using reserves in the first 60 days of a contingency operation, so my deputy, Lieutenant Colonel Charles H. Cureton, and I remained at home until 15 October 1990 while I MEF made its historic deployment to the Persian Gulf. Just before leaving my civilian job, one of my co-workers and a fellow Vietnam veteran, former Marine sergeant Jim Stephenson, asked me to look up his two sons, both of whom were Marines in theater. I promised to do my best.

My instructions from General Simmons were to oversee the overall historical collection effort, conduct oral history interviews, and ensure the quality of the various units' Command Chronologies. The last is one of the primary sources for the writing of Marine Corps history. As the unit's only aviator, I was also given the task of covering the 3d Marine Aircraft Wing. My own instructions to the members of my detachment were: (1) to be as self-supporting as possible and (2) to carry out our tasks on a non-interfering basis.

We finally arrived in theater on 9 November 1990 in a C-5 Galaxy via Dhahran, Saudi Arabia. We carried an assortment of begged and borrowed laptop and ancient "portable" computers plus photo and video equipment. Upon arrival at the I MEF command post, then at the Commercial Port of Jubayl, Lieutenant General Walter E. Boomer designated me Command Historian of the force. Among my tasks was the writing of the I MEF Command Chronology. This along with my journal notes and oral interviews became the principal source for this work.

My initial orders to active duty authorized a rental car for the two of us although the intention was probably for domestic use rather than overseas. Transport within the theater was at a premium, however, and after some searching I was able to rent a sub-compact car. The Saudi government replaced this shortly with a sedan which, I must say, possessed remarkable off-road handling abilities. This in turn was swapped for a camouflaged Jeep Cherokee just before the ground campaign. Altogether we put some 30,000 miles on these vehicles as we crisscrossed the I MEF area of operations to witness events from the launching of first Marine air strikes on Iraq on 17 January 1991 to the liberation of Kuwait City on 27 February 1991.

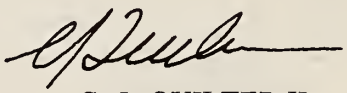
In December I attached Charlie Cureton to the 1st Marine Division. In mid-January 1991, Lieutenant Colonel Dennis P. Mroczkowski arrived and I

placed him with 2d Marine Division just as it moved forward. During the ground campaign, the unit's executive officer, Lieutenant Colonel Ronald J. Brown, and our museum specialist, Lieutenant Colonel Frank V. Sturgeon, arrived to handle the onerous job of collecting and cataloging a myriad of documents and artifacts. Ron Brown later accompanied a humanitarian relief joint task force to northern Iraq in Operation Provide Comfort.

During the air campaign of Operation Desert Storm I alternated locations with the I MEF command post at Safaniyah, Saudi Arabia, and with air groups of the 3d Marine Aircraft Wing. During the ground campaign I was either with the I MEF command post near "Al Khanjar" or forward with the divisions.

This monograph was written from mid-1991 to February 1992 and consists of events and issues from the perspective of the I MEF commander, Lieutenant General Boomer, who incidentally made the historians' job infinitely easier by recording all of his staff meetings. At the time it was written, the reports of the Marine Corps' Battle Assessment Team under Colonel Clifford L. Stanley were not yet completed. When future historians write the final history of this epoch, they will benefit greatly from the detailed analyses of this group.

I wish to thank Lieutenant Colonels Cureton, Brown, and Mroczkowski for their unstinting assistance in the Persian Gulf and in the preparation of the manuscript. This work is dedicated to the memory of Lance Corporal Dion J. Stephenson, USMC, killed in action near the southwest corner of the Kuwait--Saudi Arabia border on 29 January 1991.



C. J. QUILTER II
Colonel, U.S. Marine Corps Reserve

Table of Contents

Foreword iii
Preface v

7th Marine Expeditionary Brigade Deploys 3
Establishing the Force 8
Assessing the Threat 15
Meeting the Threat from the Air 19
Shifting to the Offense 20

Manning the Force 21
Expanding the Area of Operations 23
Operation Imminent Thunder 24
Host Nation Cultural Issues 27
Logistics: The Birth of 'Saudi Motors' 28

A Presidential Visit 30
Reinforcements Arrive 31
The Beginning of Offensive Planning 34
Warfighting and the Force 35
The First Plan 37

Deception and Psychological Warfare 39
Moving to the Offense 40
Supporting the Move North 43
Cementing the Alliance 44
Refining the Plan 46

D-Day: The Air Campaign Begins 49
Double Breaches and Logistical Headaches 54
Ground Actions Before D-Day 60
Fratricide 62
Force Deception and Reserve 64

Marines and Civilians 65
Coalition Forces on the Left and Right Flanks 66
Deception Operations 66
I MEF Moves Forward 68
Manpower Issues 72

The Eve of G-Day 73
The Liberation of Kuwait: The Breach 75
Counterattack and Exploitation 91
Consolidation and Victory 103
The Cost 106
Retrograde 107

Notes 113

Appendix:

A. I Marine Expeditionary Force Organization, Personnel, and Major Equipment 117
B. Total I MEF Effective Personnel Strength 120
C. Major Equipment 121

Index 123

U.S. Marines in the Persian Gulf, 1990-1991

With the I Marine Expeditionary Force in Desert Shield and Desert Storm

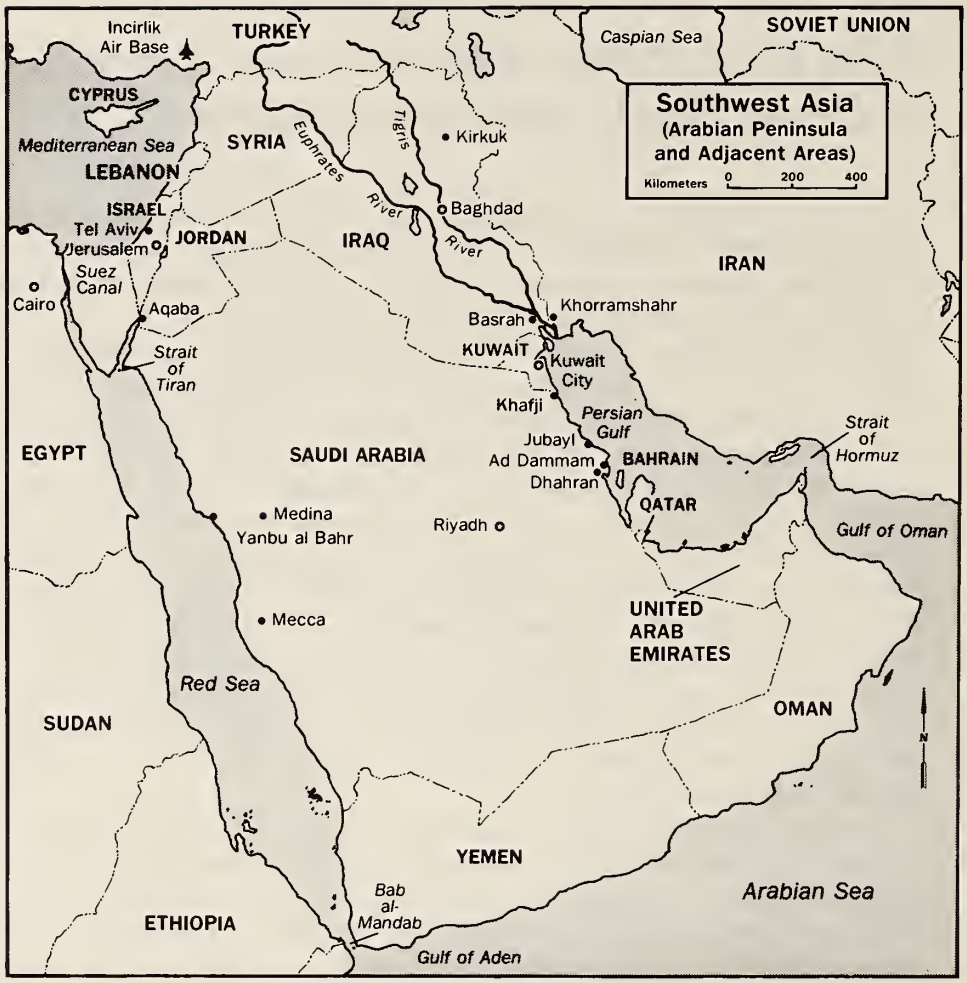
On 8 August 1990, a long-planned change of command ceremony took place at Camp Pendleton, California. Walter E. Boomer pinned on the third star of a lieutenant general of Marines and then assumed command of I Marine Expeditionary Force and Marine Corps Base, Camp Pendleton. The lean officer with the soft Tidewater accents of his native Rich Square, North Carolina, was not quite 52 years old. He had been educated at the Randolph Macon Academy, followed by Duke University, where he had been cadet battalion commander of the Naval Reserve Officer Training Corps. In his 30 years of service, he had two combat tours in Vietnam where he was awarded two Silver Stars and two Bronze Stars for gallantry. He had commanded platoons, a company, a battalion, and a division. His instructor and staff assignments in Washington and elsewhere included a term as Director of Public Affairs at Headquarters Marine Corps. Subordinates found him intelligent, well-read in military history, an approachable and good listener with a nonmercurial personality. He was respected for an uncanny sense of danger and an ability to bring people together for a common purpose. General Boomer would command the largest force of Marines to go into combat in a generation and lead them to the Corps' most stunning victory in 40 years.

A major, and unanticipated, crisis had occurred in the Middle East and Boomer found the staff hard at work under his Chief of Staff, Colonel Eric E. Hastings, a former commander of an attack squadron, aircraft group, and expeditionary unit. Many of the staff had recently joined I MEF in the annual summer turnover of assignments. The crisis facing I MEF and the western world as a whole was the Iraqi invasion and occupation of Kuwait on 2 August. President George Bush, with Congressional approval, had decided to send American forces to the Gulf* to defend Kuwait's neighbors to the south from further invasion by Iraq's brutal and unpredictable Baathist dictator, Saddam Hussein.

Most vulnerable was Saudi Arabia with its large area and relatively small armed forces. Also at risk were the other members of the Gulf Cooperation Council, the smaller nation-emirates of Bahrain, Qatar, Oman, and the United Arab Emirates. If proposed economic and political sanctions against Iraq failed, the President was prepared to employ American forces as part of a multinational effort to eject Saddam's forces from Kuwait. To this end, the Islamic kingdom of Saudi Arabia permitted the stationing of foreign troops on its soil for the first

---

*Most maps in the English language refer to the body of water in the middle of the world's greatest petroleum producing region as the Persian Gulf. In Arabic speaking countries, it is known as the Arabian Gulf. This account will adopt the English usage or simply "the Gulf."



WO (then-Sgt) Charles G. Grow, USMC, a member of the combat art team sent to cover Desert Shield and Desert Storm, used watercolors to record U.S. naval construction personnel "digging in" the I MEF forward headquarters at Safaniya, Saudi Arabia, in January 1991. Sgt Grow was the team's "studio manager" and a prolific contributor in many mediato its total output.

time in its 58-year history. Although Marines had been deployed to the region a number of times since World War II, in later years they found operations there to be frustrating, inconclusive, and at times, tragic. Memories of many Marines were still fresh with the 444-day Iranian hostage crisis of 1979-81 and the ill-fated attempt to rescue them. More searing was the 1983 disaster at Beirut, Lebanon, where 241 Marines and sailors were killed in a terrorist suicide attack while on a peace-keeping mission.[1]

By coincidence, some of the members of the staff had recently returned from Florida where they were involved in a U.S. Central Command exercise known as Operation Internal Look. Its scenario was remarkably similar to the one now unfolding in the Gulf. During the course of the problem, Marine forces were assigned to defend the port and industrial complexes around Jubayl (Al Jubayl)* in Saudi Arabia's eastern province.

Central Command was the unified command that had evolved from the Rapid Deployment Joint Task Force. Its primary responsibility involved contingencies in the Middle East. It was normally headquartered at MacDill Air Force Base in Tampa, Florida, and the billet of its Commander-in-Chief (CinC) alternated between an Army and a Marine general. The current CinC was General H. Norman Schwarzkopf, USA, a Vietnam war hero who later served alongside Marines as during Operation Urgent Fury on Grenada in 1983.

7th Marine Expeditionary Brigade Deploys

Central Command's spearhead Marine Corps formation was the 7th Marine Expeditionary Brigade based at the Marine Corps Air-Ground Combat Center at Twentynine Palms in California's Mojave Desert. Its leader was Major General John I. Hopkins, a craggy, highly decorated veteran of 34 years service with a raspy Brooklyn-accented voice. The ground combat element (GCE) of this Marine Air-Ground Task Force was Seventh Marines (Reinforced), commanded by Colonel Carlton W. Fulford, Jr.** Although his team specialized in combined arms in a desert environment, nearly all of the Marines of the Fleet Marine Force, Pacific, had experienced some form of desert warfare training.

---

*There is little standardization in the transliteration of Arabic names and places. Thus, Jubail, Al Jubayl, and Jubaul are all the same place. The article in front of place names such as Al Mishab, Ar Riyadh, Ad Dammam, and Ash Shu'aybah is usually omitted in English as is Ras (point or headland) in the names of coastal places; e.g., Ras Al Mishab becomes simply Mishab. Hereafter, place names will be referred to by their common English spellings. If their formal map transliterations differ, they will be placed within parentheses in the first usage; e.g., Safaniyah (Ra's as Saffaniyah) and Kibrit (Abraq al Kibrit).

**Marine formations deploy as integrated Marine Air-Ground Task Forces (MAGTFs) of various sizes: Marine Expeditionary Unit (MEU) commanded by a colonel, Marine Expeditionary Brigade (MEB) commanded by a brigadier or major general, and Marine Expeditionary Force (MEF) commanded by a lieutenant general. Each has a Command Element (CE), a Ground Combat Element (GCE), an Aviation Combat Element (ACE), and Combat Service Support Element (CSSE).

The brigade's aviation combat element was Marine Aircraft Group 70 under command of Colonel Manfred A. Rietsch, who also commanded Marine Aircraft Group 11, a fighter-attack group at MCAS El Toro, California. His group included fixed wing, helicopter, and air defense missile units. Colonel Alexander W. Powell's Brigade Service Support Group 7 handled the combat service support tasks.

General Hopkins' operations officer, Colonel Charles M. Lohman, was awakened at 0130 on 4 August and ordered to Tampa where he participated in 72 hours of non-stop planning. To save time, General Schwarzkopf's planners used Internal Look as a model for future theater operations for the crisis. Lieutenant Colonel Timothy E. Donovan, a tanker who had learned the plans trade during a joint tour in Korea, worked up the brigade plan.

Among the planning issues for immediate attention was communications. Boomer's G-6* in charge of communications, electronics, and computers at I MEF was Colonel Robert G. Hill, one of the Corps' most experienced communicators. The Marine Corps was in a transition period in communications equipment, and the switchboard gear on hand was not fully interoperable with Central Command. General Schwarzkopf promptly lent a hand by attaching a joint communications support element with TTC-39 switching equipment to improve the force's "connectivity."

The Joint Chiefs of Staff designated 1700 Greenwich time as L-Hour and 7 August as C-Day for the commencement of operations, i.e., the day before Boomer assumed command. The code name given to the operation was "Desert Shield." The Marines of I Marine Expeditionary Force began to deploy to the Gulf in four phases over the next 40 days.

The mission of U.S. Marine Forces Central Command, MarCent, as the Marine component of Central Command was known, was to protect the critical oil and port facilities of Jubayl, Ju'aymah, and Ras Tannurah (Ra's at Tanura)** in Saudi Arabia, plus the island emirate state of Bahrain by destroying or delaying enemy forces as far north as possible. In addition to operations in support of Marine forces, MarCent aviation was to conduct theater counterair, close air support, and interdiction operations. As a contingency, MarCent was to be prepared to reembark its forces for amphibious operations. In a further contingency, if enemy forces occupied Saudi Arabia, MarCent was to be prepared to eject them and restore the territorial integrity of that nation. General

---

*Marine Corps principal staff functions generally followed joint U.S. military practice. At I Marine Expeditionary Force during this time, section heads were normally colonels, titled Assistant Chief of Staff with the following responsibilities: G-1 Manpower/Personnel, G-2 Intelligence, G-3 Operations, G-4 Logistics, and G-6 Communications/Electronics and Information Systems Management. G-3 assumed the contingency and future operations planning functions of the G-5 section during the campaign.

**The defense of the Ras Tannurah sector south of Jubayl was later assigned to U.S. Army Forces, Central Command (ArCent).

Col H. Avery Chenoweth, USMCR, at age 62, was the head of the I MEF combat art team, and present for both Desert Shield and Desert Storm. From the Desert Shield period he painted "Call Waiting," picturing patient Marines at one of many telephone facilities set up near U.S. compounds.

Boomer intended that the force be ready to fight when the first battalion and squadron was on the ground.[2]

Within 96 hours, the 7th Marine Expeditionary Brigade combined arms task began embarking from air bases in southern California at San Bernardino and El Toro as the first echelon of I Marine Expeditionary Force to deploy. The Air Force's Military Airlift Command flew a total of 259 missions to transport the members of the brigade to Saudi Arabia. As they flew, ships of Maritime Pre-Positioning Squadron 2 began steaming north to Jubayl, Saudi Arabia. The squadron carried the brigade's equipment that had been previously staged at Diego Garcia, an island in the Chagos Group in the Indian Ocean, for such contingencies.*

The first troops landed at Dhahran, Saudi Arabia, on 14 August. Uncertain of the security of Saudi ports and airfields, General Hopkins loaded some of the initial flights of his brigade with combat-ready troops. At Dhahran, they disembarked from their aircraft with weapons at the ready. This display alarmed Saudi officials who were attempting to calm the local people, most of whom realized that the Iraqis were only a half day's road march away from the densely populated tri-city area of Dammam (Ad Dammam), Al Khober, and Dhahran. The Marines then shifted 100 kilometers north to billets in warehouses at the commercial port of Jubayl to marry up with their equipment.

The twin commercial and industrial ports of Jubayl were built during the 1970s at the direction of the Royal Saudi Commission for Jubayl and Yanbu. Nearly all of the force's equipment would pass through the commercial port which was large enough to handle the simultaneous offloading of an entire squadron of the Maritime Pre-Positioning Force. The nearby Jubayl naval air facility soon become the main aerial port of entry for Marines.

Getting the troops and equipment of the 7th Marine Expeditionary Brigade out of the port itself was another matter, however. The brigade arrived so quickly that the local Saudi government and military authorities were taken by surprise. At first they refused to let the Marines deploy tactically away from the port. General Hopkins was unused to the more languid pace of business that was customary in the Middle East and he fumed as his troops sweltered in the 120-degree heat of the port's huge and unsanitary metal warehouses, unable to leave.

Within Saudi Arabia there was a sizable element of conservative and deeply religious citizens for whom the notion of allowing non-believing foreign troops

---

*The 7th MEB would be the first force to use the Maritime Pre-Positioning Force in a combat situation. The concept was implemented in 1979 and became operational in 1984-86 as part of the Military Sealift Command. In the summer of 1990, three maritime pre-positioning squadrons (MPSRon-1, -2, -3) of large cargo ships were in service, each named posthumously after Marine holders of the Medal of Honor. Civilians crewed the ships and each squadron was loaded with the equipment of a Marine Expeditionary Brigade. The ships of MPSRon-2 were MV *Cpl Louis J. Hauge Jr.* (T-AK3000), MV *PFC William B. Baugh Jr.* (T-AK3001), MV *1stLt Alexander Bonnyman Jr.* (T-AK3003), MV *Pvt Harry Fisher* (T-AK3004), and MV *PFC James Anderson Jr.* (T-AK3002).

LtGen Walter E. Boomer, left, commanding general of I Marine Expeditionary Force, and his deputy, MajGen John I. Hopkins, receive a briefing on the Iraqi threat at the I MEF command post at the Commercial Port of Jubayl on 26 November 1990. Gen Hopkins led I MEF's spearhead formation, the 7th Marine Expeditionary Brigade, to the Gulf in mid-August 1990. He later commanded the defense of the Jubayl Vital Area during Operation Desert Storm.

on the same soil as the two holy shrines of Islam at Mecca (Makkah) and Medina was anathema. Others had concerns whether Americans could operate in such a fundamentally different cultural environment. To assuage Saudi sensibilities, General Schwarzkopf issued Central Command General Order No. 1 which imposed a complete prohibition on alcohol within the theater. General Boomer in turn prohibited all forms of liberty for his force except those in the rear at Riyadh.* The Saudi religious code of laws known as *shariah* prohibited public religious services other than Islamic, so for a time, chaplains in the force were known euphemistically as "morale officers." American flags were not flown officially at any Marine installation. The 3d Civil Affairs Group, a Marine Reserve unit of specialists commanded by Colonel John M. Kaheny, a San Diego city attorney, handled the necessary relations with the civilian community.

By 20 August General Hopkins had successfully addressed Saudi concerns, and the brigade began moving into tactical positions northwest of the port. He declared the brigade "combat ready" on 25 August. To provide a base for the

*One unexpected byproduct of the no-drinking and no-liberty policies was a dramatic drop in disciplinary rates.

growing force that offered both access and security, a number of camps were leased in the adjacent 250,705-acre industrial city of Jubayl. The camps had been set up in the 1970s for some of the 52,000 workers who built the petro-industrial complex that Guinness would later term as "the world's largest public works project of modern times."[3]

In the meantime, follow-on Marine forces afloat and ashore also began deploying to the Gulf. From the east coast another brigade, the 4th Marine Expeditionary Brigade, commanded by Major General Harry W. Jenkins Jr., departed on 17 August. It become a floating reserve along with the smaller 13th Marine Expeditionary Unit (Special Operations Capable) (MEU[SOC]). The 1st Marine Expeditionary Brigade, less its command element, flew out of its Hawaii base on 25 August. The next day, the lead elements joined their equipment which had just arrived at Jubayl in the ships of Maritime Pre-Positioning Squadron 3 out of Guam. The remainder of the 3d Marine Aircraft Wing from southern California also deployed along with two specialized aviation logistics support ships, USS *Curtiss* (T-AVB 4) and USS *Wright* (T-AVB 3).

Establishing the Force

Lieutenant General Boomer flew to Riyadh, the Saudi political capital and prospective headquarters for Central Command, to establish relations with its staff on about 20 August. On 3 September 1991, he set up his command post at an unused administration building at the commercial port of Jubayl. The initial mission assigned U.S. Marine Forces Central Command was: "Defend in sector to protect vital facilities in the vicinity of Jubayl; on order, conduct passage of lines with Royal Saudi Land Forces and Gulf Cooperation Council forces." This defensive task would remain unchanged throughout the force's deployment to the Gulf. The initial area of operations assigned to the Marines was a 40 by 100 kilometer strip along the coast centering on Jubayl.

Nearly a generation had passed since the Marine Corps had conducted corps-sized operations in combat. It had been 45 years since a Marine officer had commanded a corps-size unit with two or more maneuvering divisions.* In recent years, the prospect of corps-level operations seemed so remote that it was scarcely mentioned at all in the curriculum at the Marine Corps' Command and Staff College. Although the U.S. Army did have a manual on the subject, it was oriented to an European land campaign rather than the desert expeditionary situation now at hand.[4]

During the campaign, Lieutenant General Boomer was both Commander, U.S. Marine Forces Central Command and Commanding General, I Marine

---

*Lieutenant General Roy S. Geiger commanded III Amphibious Corps at Okinawa in 1945. The divisions of III Marine Amphibious Force in Vietnam occupied generally fixed areas and did not maneuver relative to each other.

BGen James M. Myatt, Commanding General, 1st Marine Division

Expeditionary Force.* As ComUSMarCent, he was a component commander of the U.S. Central Command. CentCom's other components were: U.S. Army Forces Central Command, U.S. Air Forces Central Command, U.S. Naval Forces Central Command, and U.S. Special Operations Central Command.**

---

*During the campaign, "MarCent" and "I MEF" were used interchangeably since the Marine Corps component of Central Command and the I Marine Expeditionary Force were virtually identical. In this account, the term the "force" is used in this collective sense. When a distinction is necessary, "MarCent" and "I MEF" is used. It should be noted that forces afloat were part of NavCent.

**These were usually abbreviated as MarCent, ArCent, CentAF, NavCent, and SOCCent, respectively. General Schwarzkopf's command was CentCom, and he was referred to as CinCCent or simply "the CinC."

The I MEF Marine Air-Ground Task Force was MarCent's operational command. Marine forces afloat, principally the 4th, and later the 5th, Marine expeditionary brigades were under the operational control of Commander, U.S. Naval Forces Central Command, Vice Admiral Henry H. Mauz, USN, and after December by Vice Admiral Stanley R. Arthur.

The Joint Forces and Theater of Operations was commanded by a prince of the Saudi royal family. His Royal Highness Lieutenant General Khalid bin Sultan bin Abdul Aziz, or more simply, Prince Khalid, coordinated all Arab coalition force operations. There were no formal "host nation" or "status of forces" agreements normally associated with the deployment of American forces overseas. General Boomer placed a high priority on effective relations with Arab allies and ordered the establishment of liaison and combined training teams to work with the Saudi forces in the area. There were two Saudi ground forces in the kingdom: the Royal Saudi Land Forces under the Minister of Defense and Aviation (MODA) and a separate elite force, the Saudi Arabian National Guard (SANG). In the campaign to follow, brigades of both forces would be on the Marines' right flank. For the moment, however, the closest was the 2d SANG Brigade to the north in the sector between the Marines and southeast Kuwait. In addition, the Saudis were in the process of establishing a Marine Corps as part of the Royal Saudi Naval Force at a coastal base near Mishab (Ras Al Mishab). A U.S. Marine training team went there as well.[5]

With respect to relations between Central Command and its Marine component, both Generals Schwarzkopf and Boomer later characterized them as close, constant, and effective. When the issue of a separate Marine component

MajGen Royal N. Moore, Jr., Commanding General, 3d Marine Aircraft Wing

BGen James A. Brabham, Commanding General, 1st Force Service Support Group

commander arose in late December, both felt that it was too late to interpose another lieutenant general between themselves.[6] General Boomer's deputy commander and personal representative for Marine Forces Central Command in Riyadh was Major General Jeremiah W. "Digger" Pearson III. Pearson had completed a tour as Central Command's inspector general a year earlier, was familiar with its staff, and spoke Arabic.

The first and perhaps knottiest issue at the joint level arose even before General Boomer's arrival: control of air power. Lieutenant General Charles A. Horner, USAF, the commander of U.S. Air Forces Central Command, proposed that Marine aviation come under a single theater manager for air known as the

Joint Forces Air Component Commander. The presence of four U.S. aviation forces, host-nation, and numerous other allied air forces within the theater was daunting. It was obvious that some form of overall control was necessary. Doctrinal differences aside, the main concern from the Marines' perspective was that their unique team of air-ground forces not be broken up.[7]

General Pearson enjoyed a close friendship with General Horner; both men were active fighter/attack pilots with much combat experience. Pearson was also a graduate of the U.S. Air Force's Air War College. With recently arrived Major General Royal M. Moore, commander of the I MEF's aviation combat element, the 3d Marine Aircraft Wing, they hammered out the agreements for employment of Marine aviation by mid-September. It was during this early period that most of the basic details of the offensive air campaign were decided, well over four months before they were actually executed.

Under the system worked out, General Horner as Joint Forces Air Component Commander (JFACC) would issue a daily Air Tasking Order to coordinate all theater air operations. Marine air would continue to support its organic forces and also provide a percentage of fixed wing sorties, primarily F/A-18 Hornets and, later, A-6E Intruders plus EA-6B Prowlers for electronic support, to Central Command for theater missions. In turn, JFACC sorties would strike deeper targets nominated by MarCent's targeting cell, whose members were known as "targeteers." General Boomer's highest priority targets were, and would remain, Iraqi command and control nodes and indirect fire weapons.

MajGen Jeremiah W. Pearson III was Deputy Commander, Marine Forces, Central Command. Assigned on temporary duty to CentCom Headquarters in Riyadh, he was the senior Marine present during the planning phases and buildup for Desert Storm.

To provide its ground forces with traditional Marine close air support, Pearson and Colonel Joseph W. Robben, Jr., one of the Corps' senior air controllers, negotiated an arrangement whereby MarCent would control all offensive air missions within its area of operations by use of a series of high density air control zones, fire support coordination lines, and restricted fire areas.

Another issue was air bases. Virtually every square inch of ramp space in Saudi Arabia had already been taken or spoken for. Central Command assigned Marines two small airfields in the Jubayl area: Jubayl Naval Air Facility and King Abdul Aziz Naval Base. Even with these, there was no room for most of 3d Marine Aircraft Wing's fighter and attack aircraft. General Pearson approached an old friend, Shaikh Khalifa bin Ahmad Al Khalifa, minister of the Bahrain Amiri Defense Forces. The Shaikh immediately offered use of a base nearing completion of construction, Shaikh Isa Air Base, plus space at the already crowded Bahrain International Airport.[8] The lack of ramp space required the services of another traditional partner of Marines in combat: the SeaBees. Captain Michael R. Johnson, USN, commanded the four naval mobile construction battalions that were forward deployed from the U.S. Pacific Fleet. One of the first of their many engineering feats was the enlargement of ramps at Jubayl Naval Air Facility and King Abdul Aziz Naval Base and at Shaikh Isa Air Base on Bahrain.

By the last week of September, I Marine Expeditionary Force had grown to more than 30,000 Marines, close to General Schwarzkopf's initial cap of 42,500 including forces afloat. The historic offloading of two squadrons of the Maritime Pre-Positioning Force had gone well overall. Early problems of tracking equipment flow and a shortage of combat service support personnel to offload the vessels were overcome by an all-hands effort and Jubayl's superb port facilities. As experience was gained, each offload became smoother and more efficient. One key to the success of the deployment was the use of time phased force deployment data.* When this data was coupled with the automated tracking scanners and computers of the Marine air-ground task force decision support system (MDSS), the process achieved high degrees of accuracy and speed. The result was that I Marine Expeditionary Force was the first American force to get ashore with a sustained combat capability.

On 3 September, the 1st Force Support Group commanded by Brigadier General James A. Brabham, Jr., assumed the combat service support role for the force. Brabham had 29 years of service as a combat engineer and logistician, and also had recently completed a tour with Central Command. After flying to Riyadh on 10 August, and spending three weeks coordinating logistics, he established the group's command post in a tent compound on the Jubayl pier.

---

*TPFDD was the joint doctrine for moving units and their equipment developed in the early 1980s to promote flows and optimize use of the transportation assets of the Military Sealift and Military Airlift Commands.

The group also handled the rear area security mission until this was taken over by the 24th Marines in January.

The I MEF ground combat element was formed under the 1st Marine Division on 6 September by "compositing" (fusing) elements of the 1st and 7th Marine Expeditionary Brigades, already in country, and other units newly arrived from the division's home base at Camp Pendleton. Its commander was Brigadier General James M. "Mike" Myatt, an infantryman with a background in special operations. Myatt set aside conventional organization in favor of mechanized and armored task forces with names like Ripper and Shepherd to meet the challenges posed by a mobile threat. A mobile threat required a mobile defense. Myatt deployed his task forces in an assigned operating area that went north from Jubayl nearly to Manifah Bay (Dawhat Manifah). At the northernmost point of the division's area, Myatt placed a single battalion as a screen: 3d Battalion, 9th Marines. These exposed fighters cynically nicknamed themselves "The Speed Bump."

To provide another maneuver element, the British Army's 7th Armored Brigade, famed in World War II as the "Desert Rats," was placed under the tactical control* of the 1st Marine Division. From the start, Brigadier Patrick Cordingley's brigade was a happy marriage of British Tommy and American Marine. The British were to bring 170 Challenger tanks and 72 155mm guns which significantly increased the combat power of the force. Brabham's 1st Force Support Group logistically supported the brigade in food, fuel, and water. The British in turn brought welcome expertise in intelligence, particularly in analysis capability, to the I MEF command element.

Also on 3 September, Major General Royal N. Moore established the 3d Marine Aircraft Wing in theater as the force's aviation combat element, initially placing his flag at Shaikh Isa Air Base on Bahrain. Marine Aircraft Group (MAG) 70 now split into fixed wing and helicopter groups. Moore, the wing commander, had actually been in theater since mid-August with a skeleton staff to wrestle with air command and control issues. He was a veteran pilot with 37 years of service and 287 combat missions. He had commanded successively a squadron, an air group, and a wing and had flown fighter, reconnaissance, and electronic warfare jets as well as assault helicopters. Shaikh Isa remained the site of the wing headquarters until it moved to Jubayl in January 1991.

With the dissolution of 7th Marine Expeditionary Brigade, Major General Hopkins moved to I Marine Expeditionary Force as deputy commanding general and his staff joined the MEF command element. As originally envisioned, after the "compositing" of staffs was complete, a number of staff personnel would be sent home as being redundant. This did not happen. The pace of staff operations was so intense that senior field grade officers slept by their desks so as to be available around the clock. The wartime Table of Organization for a Marine Expeditionary Force did not account for the fact that combat operations

*The term "tactical control" is used in combined operations and is essentially synonymous with "operational control" except for the power to relieve commanders.

centers and sensitive compartmented intelligence facilities required 24-hour staffing. Virtually no one went home.

Assessing the Threat

As soon as the Iraqi forces occupied Kuwait, the combat engineers of Iraqi *III Corps* began the construction of a double band of barriers, minefields, and primary defense fortifications that looped through southeastern Kuwait (the "Heel") from the Gulf to west of the Manaqish oil field. Although the terrain was generally flat, it was not perfectly so. The Iraqis located their minefield/obstacle belts for optimum surveillance from higher terrain inside. The barriers paralleled the Saudi border about 5-15 kilometers inside Kuwait and were separated by an open area 3 to 18 kilometers wide, dubbed "No Man's Land." Along the Saudi side of the border itself, the Saudis had constructed a five-meter-high earth barrier for security purposes years earlier. "The Berm," as it was commonly known, had police posts about every 15 kilometers which became Saudi forward observation posts. The Iraqis also built defenses along the entire coastline of Kuwait. These included interlocking trenchworks, bunkers, waterline barbed wire obstacles, direct fire weapons, and mines. The *III Corps* area of operations included the heel of Kuwait and its western boundary ran roughly from Al Jahra to the Manaqish bend of the border.

The first active *III Corps* defenses were just inside the second obstacle belt and consisted of infantry antiarmor weapons, and Soviet-manufactured T54B, T55, and T62 tanks. Five infantry divisions eventually comprised the primary defenses opposite I MEF; from Manaqish to Wafrah they were the Iraqi *7th, 14th, 29th, 42d*, and *8th Infantry Divisions*. The operational reserves consisted of the *5th Mechanized Division* located near the Burqan oil field and the *3d Armored Division*, located about 20 kilometers north of the Al Jaber air base. This unit was armed with Iraq's newest main battle tank, the Soviet T72. Defending the vital Al Jahra road intersections and the adjacent Mutla Ridge were *IV Corps' 1st Mechanized Division* and the *6th Armored Division*. Four other *III Corps* infantry divisions manned defenses along the coast from Al Jahra to the Saudi border. The Iraqi artillery brigades of *III Corps* were equipped primarily with D20 152mm howitzers. The brigades were deployed so that the obstacle belts were located at mid-range of the D20 in order to provide overlapping coverage of the last 5,000 to 10,000 meters of the approaches to the outer belt. They were augmented by Brazilian-made Astro multiple rocket launcher systems and Soviet-designed Frog (free-rocket-over-ground) unguided missiles.

General Boomer believed that these indirect fire weapons were the greatest threat to an attacking force because of the sheer numbers involved and their capability to deliver chemical fires. The Iraqis were the most experienced force in the world in the use of chemical weapons, and Boomer and his staff firmly believed that chemicals would be used against an attacking force. The Iraqi use of chemicals against the Iranians in the 1980-88 war was *prima facie* evidence

The head of the I MEF combat art team, Col H. Avery Chenoweth, USMCR, driving about in his sand-colored, four-wheel-drive Jeep Cherokee sketched a large number of individual Marines participating in Operation Desert Storm. At right, he records the face of Sgt Serena Reid, USMC, a combat videographer for I MEF, as he saw her on 21 January 1991.

that Saddam Hussein would be predisposed to order their use in this instance. A further worry was biological warfare. The intelligence community believed that Iraq had the capability to manufacture the virulent and lethal anthrax toxin.*[9]

The Iraqis also deployed to the heel of Kuwait an extensive integrated air defense system of six divisions and brigades that used a French-supplied command, control, and communication system named Kari. Like the ground arms, the weapons were mostly Soviet-manufactured and included radar and heat-seeking missiles, plus large numbers of antiaircraft guns ranging in caliber from 14.5 to 130 millimeters. The Iraqis also used the direct fire antiaircraft guns as anti-personnel weapons in their primary barrier and beach defenses.

To form a picture of enemy defenses, capabilities, and intentions within his area of operations, General Boomer directed his G-2 for Intelligence, Lieutenant Colonel Bruce E. Brunn, to implement an intelligence collection plan. He also ordered an Intelligence Preparation of the Battlefield (IPB) for the defense of Saudi Arabia. Brunn, working with Colonel Charles M. "Chuck" Lohman, who had moved up from the brigade to become the force operations officer (G-3), made a series of map overlays and graphics to visually depict key decision points and areas on the battlefield. The process gave General Boomer and his commanders an easily understood matrix to facilitate their decision making. The same system was used for the assault into Kuwait later.

The force's organic collector of ground intelligence was Colonel Michael V. Brock's 1st Surveillance, Reconnaissance, and Intelligence Group (1st SRIG). Brock was an infantry and intelligence officer with previous tours in Vietnam, with the Defense Intelligence Agency, and in the Intelligence Division, Headquarters Marine Corps. The concept of a SRIG was a recent organizational innovation to improve Marine intelligence operations. It combined the personnel and equipment of previously independent intelligence collection agencies into a "type" command. Marine doctrine called for the SRIG to gather information as tasked in Brunn's collection plan for analysis, production, and dissemination. To further the effort, the analysts of Brock's units were attached to Brunn's G-2 section. In addition, some SRIG assets such as the Marine All-source Fusion Center, Fleet Imagery Intelligence Unit, and Topographic Platoon produced

*The concerns were justified. By mid-November 1991, postwar inspections by the United Nations Special Commission on Iraq had inventoried 46,000 artillery rounds, bombs, and missiles, including Scud ballistic missiles, capable of delivering chemical and biological agents. The chemicals were mustard gas and sarin, a nerve agent. The Commission also recovered samples of the botulism and anthrax toxins. Further, the Commission concluded that Iraq was within 12-18 months of producing a nuclear weapon.

finished intelligence on their own.* Finally, Colonel Brock also assumed the duties as area commander for the force's headquarters camp at Camp Gray, named in honor of the Commandant and formerly Camp 5 or *Haii 5*, in the industrial city of Jubayl. His headquarters company provided a wide variety of housekeeping services to the multinational forces assembled there besides those of his own widely scattered SRIG.

Intelligence about the Iraqi dispositions and defenses in southeast Kuwait was one of the most frustrating issues during this period. There was inadequate detailed photographic imagery of the area. The Marine Corps had decommissioned its last organic overhead photo platform, the RF-4B Phantom II, in August 1990, and the reconnaissance pods for its McDonnell Douglas F/A-18 fighter/attack jets were not yet in service. Requests by MarCent for theater and national assets imagery competed with those of CentCom's other components. The result was generally unsatisfactory, usually a case of too little and too late. To fill in the gap, all three Marine remotely piloted vehicle (RPV) companies were in the theater and being employed to the limit. The Marine Corps had acquired small Israeli-developed Pioneer aerial vehicles as well as about 60 Exdrone unmanned aerial vehicles. They looked much like giant model airplanes.** The vehicles offered advantages of relatively long time-on-station, difficulty of detection, and low cost. Perhaps most important of all, they were owned by MarCent. Although their imagery product was grainy, monochrome video, it had the advantage of being rendered in real time.

There were difficulties with human intelligence as well. After lengthy negotiations, Brunn won access to the Kuwaiti refugee center at Al Khafji, an invaluable source for information about conditions in Kuwait. On 22 November, Central Command canceled access to the center at the request of Special Operations Command. Despite this discouraging development, Brunn pressed on with contacts in the exiled expatriate community for help about conditions in Kuwait. On the military side, political concerns of the Saudis would prevent force reconnaissance teams from deploying along the border area until December 30th.

---

*With later reinforcements, 1st SRIG's units included Headquarters Company; the 1st Radio Battalion (Reinforced); the 8th and 9th Communications Battalions reinforced by the Reserve 6th Communications Battalion; the 1st, 2d, and 3d Remotely Piloted Vehicle Companies; the 1st Air and Naval Gunfire Company (ANGLICO) reinforced by Reserve units of 3d ANGLICO; 1st Intelligence Company; and the 1st and 2d Force Reconnaissance Companies reinforced by the Reserve's 3d and 4th Companies. Maximum strength on 24 February 1991 was 3,168 personnel total.

**Like remote-controlled model airplanes, RPVs were controlled by a Marine on the ground who used a computer joystick to maneuver the craft while looking at a television monitor. During landings, an outside pilot visually guided the craft to an arrested landing by use of a hook and cables stretched across the runway, that was often just a patch of aluminum matting. The RPVs used video and forward-looking infrared radar for day and night intelligence-gathering, respectively.

Meeting the Threat from the Air

In mid-August, the Joint Forces Air Component Commander, Lieutenant General Horner, parceled out theater air defense tasks. He assigned defense of the MarCent area of operations, the northernmost portions of the Gulf, and, together with the two-squadron air force of the Bahrain Amiri Defense Force, the island of Bahrain to the 3d Marine Aircraft Wing. A complicating issue was that MarCent's area of operations overlapped air defense zones within Saudi Arabia. Therefore, final authority to engage targets in these areas rested with the Eastern Province Area Commander, Major General Saleh.

For close-in and medium-range air threats, General Moore deployed agile, light-weight, shoulder-fired FIM-92 Stinger heat-seeking missiles and radar-guided, semi-active homing MIM-23 Improved Hawk missiles. The Marine Corps possessed neither airborne early warning radar nor an effective defense against ballistic missiles. To expand its radar coverage, the force's tactical air operations center imported radar data from both the Saudi and U.S. Air Force airborne warning and control system aircraft (AWACS) and U.S. Navy ships in the Gulf. Central Command assigned U.S. Army Patriot missile batteries to counter Iraq's Scud ballistic missile threat in MarCent's vital areas.[10]

Iraq possessed about 405 fighter interceptors, 397 strike aircraft, and 136 attack helicopters, roughly three times the number of comparable Marine aircraft in theater. Many fighters were deployed around the Iraqi capital of Baghdad. Others were based in southern Iraq, within comfortable striking distance of Kuwait and the Eastern Province of Saudi Arabia. There were three large airfields in Kuwait: Ahmed Al Jaber Air Base (Al Jaber) in the middle of the heel, Kuwait International Airport near Kuwait City, and Ali Al Salem Air Base to the west. (The first two later became force objectives.) However, the Iraqis chose not to deploy any tactical jets to Kuwait, possibly because their own airfields in southern Iraq were close enough as it was.

During the Iran-Iraq War of 1980-88, the Iraqi Air Force did not display any particular capability in close air support. However it did successfully deliver chemical weapons against attacking Iranians. It also carried out long-range conventional attacks against oil facilities on Larak Island in the Strait of Hormuz and severely damaged USS *Stark* (FFG 31) with an Exocet anti-shipping missile.

To meet this threat, F/A-18 Hornet jets* of Marine Aircraft Group 70** commenced around-the-clock combat air patrols over the northern Gulf on 18 August. From then until the onset of hostilities, the group's pilots constituted

---

*The McDonnell-Douglas F/A-18A and F/A18C were single seat, supersonic twin engine fighter attack aircraft equipped with a Hughes APG-65 "look-down" pulse doppler radar and heads-up display. In the Gulf its air-to-air weapons were AIM-7M semi-active radar homing missiles, AIM-9M heat-seeking Sidewinder missiles, and an M61A1 high speed 20 millimeter cannon.

**MAG-11 after 30 September 1990.

the primary airborne defense of the most forward deployed U.S. Navy surface vessels. There were a number of near engagements during 1990. Typically, numbers of Iraqi fighters overflew northeast Kuwait near Bubiyan Island to penetrate airspace over the Gulf. Marine Hornets countered each Iraqi flight. However, the Marine pilots were not allowed to fire at the Iraqis under the rules of engagement then in effect unless they were directly threatened. On several occasions, the Marines closed to 10 miles--well within radar missile range--and were preparing to open fire when the Iraqi intruders turned abruptly away. Although the pilots were frustrated that they could not engage the Iraqis with weapons, these incidents demonstrated how effective their barrier was. No allied force or vessel was ever threatened by Iraqi aircraft during the 152-day period in which Marines defended the northern Gulf area.

Shifting to the Offense

In early October, General Boomer's assessment was that the Iraqi opportunity to successfully invade Saudi Arabia had passed. The I Marine Expeditionary Force staff began planning future offensive operations concurrently with initiatives by General Schwarzkopf. To develop a plan, Schwarzkopf brought in a team from the Army Command and General Staff College. Colonel Lohman, the Force operations officer, got inklings of their initial concept from the I MEF plans officer, Colonel James D. Majchrzak, who went to Riyadh on 3 November for an exchange of views with CentCom's planning staff. The Marines became concerned.

It seemed that the CentCom planners were developing a concept of operations that treated I MEF as if it were an Army corps. Much of the 3d Marine Aircraft Wing's offensive air assets might be used in theater support of non-Marine units. (Unknown to the Marines at the time, General Schwarzkopf was resisting pressure to appoint a single "ground force commander" for future offensive operations.)[11] Upon hearing of these developments, General Boomer directed his battle staff planning group under Majchrzak not only to develop MarCent plans, but also to provide prompt and appropriate inputs to General Schwarzkopf's planners as well.

Majchrzak snagged the former 7th MEB planning expert, Lieutenant Colonel Tim Donovan, into the group which went into a surge planning cycle to develop alternative concepts that ensured MarCent's use in a more appropriate manner. On 14 November, at Riyadh, General Boomer briefed General Schwarzkopf on the force's proposed concept of operations, the CinCCent was pleased to learn that his Marine forces could be more effectively employed. He approved Boomer's concept for continued planning and refinement of the plans. Although the CentCom staff provided no specific written guidance, Majchrzak stated the MarCent mission as:

> When directed by USCinCCent, USMarCent conducts USCentCom supporting attack to fix and destroy Iraqi operational reserves in southeastern Kuwait to preclude their employment against USCentCom main attack in the west; isolate Kuwait City for EPAC [Eastern Province Area Command]/multinational MOUT [military operations in urban terrain] operations. Be prepared to continue the attack north to support USCentCom offensive operations.[12]

In fact, this was precisely the mission assigned to MarCent. During the second week of November, the battle staff planning group began to develop courses of action and rough estimates of their supportability. Most of these involved a penetration of the heel of Kuwait and link-up with an amphibious assault somewhere along the Kuwaiti coast by the 4th Marine Expeditionary Brigade under command of Major General Harry W. Jenkins, Jr. The MEF planners briefed and consulted with Jenkins and his operational commander, Vice Admiral Henry H. Mauz, Commander, U.S. Naval Forces Central Command (NavCent), as the concepts evolved.

Manning the Force

In early November 1990, General Schwarzkopf asked his component commanders to determine what numbers and types of forces they would need to prevail in an offensive scenario. General Boomer instructed Lohman, Majchrzak, and his G-1 for manpower, Colonel Robert K. Redlin, to work up an appropriate force list to achieve sufficient force ratios for an assault into southeast Kuwait. On 8 November President Bush announced the impending reinforcement of Central Command by 200,000 American personnel which included a large number of Reserve units.

The reinforcement of I MEF committed nearly all of East Coast-based II Marine Expeditionary Force, including the 2d Marine Division, the 2d Force Service Support Group, and nearly all of the 2d Marine Aircraft Wing. Smaller units would come from III MEF in the Western Pacific. When this happened, I MEF became the largest Marine force assembled since the Vietnam War, approximating three-fourths of the regular Fleet Marine Forces. Plans in mid-November called for the flow of about 25,000 reinforcement personnel to begin about 10 December at the rate of 1,000 Marines per day. To house the reinforcements, SeaBee battalions began construction of six 2,500-man tent camps. In Washington, Headquarters Marine Corps established a manpower stop-loss program: Marines who would be in permanent change-of-station status or released from the service from November 1990 to May 1991 were retained in their stations. This included many already with I MEF.

A major additional reinforcement under Boomer's tactical control was to be the British Army of the Rhine's 1st Armoured Division, commanded by Major

General Rupert Smith. This division was to absorb Brigadier Cordingley's 7th Armoured Brigade already in place with the force.*

Headquarters Marine Corps also activated 80 units of the Selected Marine Corps Reserve, or about 54.7 percent of 4th Division-Wing team personnel. This was the first significant call-up of Marine Reservists since the 1950-53 Korean War and the first deployment of Reserve units individually since World War II. In addition, a total of 7,058 Individual Ready Reservists and 537 Retired Reservists received orders to active duty.[13] Unlike other services, the Marine Corps adhered to a policy of not mobilizing Reserves for the first 60 days of a contingency.** Even so, some 64 volunteer Reservists--mainly members of the 3d Civil Affairs Group and MEF staff individual mobilization augmentees (IMAs)--deployed to the theater in August, although most were ordered home after a month or so. By 1 December, there were only 16 Marine Reservists in Saudi Arabia. Within another 60 days, more than 31,000 Marine Reserves would be activated and one out of every eight Marines who participated in the liberation of Kuwait were Reserves.*** Other Reserve units filled in slots of the Unit Deployment Program afloat and overseas. On 6 November, the first round of 800 Reservists in 21 different units was activated.

The Reserves responded enthusiastically; over 99.5 percent reported in after call-up. Virtually all were trained, fit, and able to go to war. About 12,000 participated in all echelons of Marine forces in the Gulf. As will be seen, there were many outstanding performances in combat by Reserve units and individuals. The integration of Reserve with Regular forces went quite smoothly. A postwar study indicated that Regular commanders found Reserves to be competent, bright, highly motivated, pragmatic, and oriented toward problem solving. At first, however, there were minor problems. The transition from the Reserve Manpower and Management Pay System (REMMPS) to the Joint Uniform Military Pay System (JUMPS) was unsatisfactory and caused financial hardships for many Reserve Marines. Battalion and regimental staffs had not trained in depth together. Some aviators were not proficient in use of night vision equipment although their overall flying experience exceeded that of Regular pilots on average.[14]

The largest of the Reserve units mobilized was the 24th Marines, headquartered in Kansas City, which assumed the rear area security mission for the

---

*Administratively, all British forces were under control of the Commander, British Forces Middle East, Lieutenant General Sir Peter de la Billiere.

**A small number of Marine Corps Reserve personnel assigned to the CentCom staff were activated in August 1990 and deployed with General Schwarzkopf to Riyadh. They are not included in the I MEF/MarCent total.

***The call-up totals by category were: Selected Marine Corps Reserve, 23,791 (4th MarDiv, 15,616; 4th MAW, 4,176; 4th FSSG, 3,999) and Individual Ready Reserve, 8,322 (IRR, 6,243; Retired, 615; Preassigned IRR, 1,464). Of these, 11,860 were assigned to I MEF on 28Feb91.

force in January. The story of their deployment was typical of the Marine Reserve experience in the Gulf.

The regiment mustered about 1,716 personnel and consisted of a headquarters company and three rifle battalions spread throughout drill sites in the mid-west. Its commander was Colonel George E. Germann, a regular officer and graduate of the U.S. Military Academy with a devotion toward physical fitness. The battalions received their activation orders on 13 November and most of the officers reported on 22 November. The enlisted personnel--many of them college students--arrived by 29 November. Some members of the regular inspector-instructor staff deployed with the unit, some reported to combat replacement companies, and others remained at their stateside posts. The regiment's 1st Battalion deployed to Okinawa where it filled a vacated slot as part of the unit deployment program. After administrative and medical screening at 14 local training centers in places like Danville, Illinois, and Johnson City, Tennessee, the remaining companies drew their equipment and flew to Camp Lejeune during the first week in December. There, they formed into their usual battalions, the 2d under the command of Lieutenant Colonel Francis A. Johnson, and the 3d under Lieutenant Colonel Ronald G. Guwilliams. After a brief training cycle that included weapon firing and chemical warfare training, the regiment flew into Jubayl on 1-3 January 1991.[15]

Expanding the Area of Operations

General Boomer moved his command post out of the commercial port to an unused auxiliary police post in the industrial city of Jubayl on 27-29 November. The "police station" was a short walk from Camp Gray. The terrible heat of August and September had broken, and the living was as good as it would ever get at I MEF. This was the first of four moves that the force headquarters would make over the next three months.

As the planning evolution and buildup proceeded, the force operating area for both training and maneuver space became increasingly constricted. From the beginning, there had been no live fire ranges available to Marines and therefore no way the 1st Marine Division could zero in its weapons, especially the ones that had come off the ships of the Maritime Pre-Positioning Force. The subject seemed to be a particularly delicate one for the Saudis who at first were nervous with the idea of any foreign weapons being fired within the kingdom at all. Eventually, the Saudis realized the importance of the ranges and a mobile training team from the Marine Air-Ground Combat Center at Twentynine Palms, California, under Colonel John W. Moffett, commissioned the first sites in November. Moffett's range organization was good, and the Saudis were sufficiently impressed to soon become the sites' second-best customers.

Another concern of this period was corps boundaries. To the west the U.S. Army Forces Central Command (ArCent) area of operations compressed Marine forces into a 30-kilometer-wide band along the coast to Manifah Bay. The ArCent commander, Lieutenant General John G. Yeosock, USA, did not yet

have the logistical capability to move his forces any further west. The issue reached a critical stage as preparations began for a three-division Marine Expeditionary Force. General Boomer--as ComUSMarCent--met with General Yeosock at Jubayl in late November to discuss the expansion of the MarCent area of responsibility. Yeosock was sympathetic, but without the benefit of Maritime Pre-Positioning Force shipping, his forces could not match the initial logistics flow rate of the Marines. The Army's VII Corps, scheduled to conduct the ArCent main attack from bases near Hafar al Batin, more than 500 kilometers from its main port at Dammam. The XVIII Airborne Corps' tactical assembly areas were to be even further west. As it was, VII Corps was just beginning to get substantial amounts of equipment in-theater and could not be expected to displace soon.

To the north, relations with the Saudi and other Arab allies were still in a delicate and evolving state through November. Talks with the Saudis revealed two issues. First was the political necessity of positioning Saudi forces between the Iraqis and the Marines for the time being. Second, the Saudis were unable to move much further north without coming within range of Iraqi supporting arms. This contrasted with the triple pressures on General Boomer: to place Marine forces near offensive assembly areas, to gain space to accommodate large numbers of reinforcements, and to position the logistics support for offensive operations forward.

To solidify relations with the Arab allies, General Boomer stepped up the force's cross-training program. From October through December, company-sized units from the 1st Marine Division plus reconnaissance and ANGLICO teams from the 1st Surveillance, Reconnaissance and Intelligence Group (SRIG) conducted continual cross-training with Arab units to the north of the force. The bonds formed between Marines and Arab soldiers during this time contributed greatly to building mutual confidence and later success in combat.

Operation Imminent Thunder

Central Command conducted a five-phase combined exercise known as Operation Imminent Thunder from 15 to 21 November 1990. General Schwarzkopf wanted to provide "an environment within which joint/combined operational issues c(ould) be identified, analyzed, and resolved" by faithfully simulating theater situations and conditions in a defensive scenario.[16] It was the first major joint and combined force exercise in-theater to have fully integrated air, ground, and naval activity. For their part, Marine forces conducted fire support coordination and linkup operations with the 2d Brigade of the Saudi Arabian National Guard and an amphibious landing force of the 4th Marine Expeditionary Brigade. General Boomer also used the exercise as an opportunity to shakedown his staff in command, control, communications, computers, intelligence, and interoperability (C4I2). Unlike his subordinate units which had been stable in personnel for months, Boomer needed an event like this to weld his "composited" staff into a warfighting headquarters.[17]

The proximity of Iraqi forces in Kuwait added an element of unpredictability that gave Imminent Thunder actual as well as simulated combat conditions. General Boomer told his command that he wanted clear thinking from them. He warned it not to let any Iraqi misstep "snowball out of control." He wanted to ensure that the allies, not Saddam Hussein, controlled the future agenda. Central Command was concerned as well. To remove any possibility of provocation and to reduce the exposure of amphibious shipping to missile threats, General Schwarzkopf moved the proposed landing site at Ras Al Mishab (Mishab), located 50 kilometers south of the Kuwait border, a further 97 kilometers southeast to Ras Al Ghar.*

Imminent Thunder was a five-phased CentCom-sponsored event. Marine forces participated in each phase. During Phase I, the focus for I MEF was the 3d Marine Aircraft Wing's support of the D-Day air tasking order (ATO). Objectives were to validate the air tasking order while using the Airborne Command and Control Center (ABCCC) on board a Lockheed EC-130E Hercules aircraft. This included exercising the interface with the Marine Air Command and Control System (MACCS) and its Direct Air Support Center (DASC) which coordinated all offensive air operations within the MarCent area of operations.

Phase II involved amphibious operations for the purpose of testing fire support coordination "deconfliction" procedures within the amphibious objective area and MarCent sectors during the assault. At the same time, MarCent's ability to provide air support to NavCent during pre-assault and amphibious assault operations was evaluated. Unfortunately, Vice Admiral Mauz was forced to cancel most of the amphibious portions of the exercise for safety reasons because of high seas.

Phase III concentrated on linkup and reinforcement operations. MarCent forces participated fully and the many training goals reflected both current and future operations. They included fire support coordination, particularly close air support procedures, combined training with Saudi forces, exercise of the MEF defense plan including rear area security, employment of surge air operations, mass casualty evacuation, linkup and passage of lines, Direct Air Support Center coordination with the Airborne Command and Control Center, and integration and "deconfliction" of combined arms in the defense.

During Phase III there was also a historic employment of Marine aviation as a maneuver element using a concentration of Bell AH-1W Sea Cobra attack helicopters dubbed Task Force Cunningham. From General Boomer's perspective, the employment of attack helicopters as a maneuver element was an experiment. The concept had been put forth by the assistant wing commander, Brigadier General Granville "Granny" R. Amos, who had led the Marine air assault at Grenada in 1983, and Lieutenant Colonel Michael M. Kurth, the commanding officer of Marine Light Helicopter Attack Squadron 369. Both had

---

*This location is not to be confused with the site of the Ras Al Ghar desalinization plants south of Jubayl.

been impressed by the U.S. Army's use of teams of laser-designating Bell OH-58 Kiowa scout and Hughes AH-64 Apache attack helicopters as independent maneuver elements against armored and mechanized forces in training. Airborne laser designation for the force's Hellfire anti-armor missiles was not yet a Marine Corps capability.

Although Task Force Cunningham demonstrated a new concept, it was difficult to move the unit around in the defense during the exercise, and even more so on the offense. The added command element complicated air tasking procedures as well, especially for the control of fixed wing aircraft. In the end, the consensus of commanders and staff was that the scheme limited the amount of air support that ground commanders could draw upon, and that it was better to keep helicopter assets in general support for more flexibility. On the other hand, Kurth was later inspired to place ground laser designation gear aboard some of 3d Marine Aircraft Wing's Bell UH-1N Huey helicopters to give his Hellfire-equipped Sea Cobras added capability.[18]

Phase IV was primarily NavCent cross training and Phase V was a critique and discussion of lessons learned. Imminent Thunder's main issues centered on air and communications issues. In the joint air control arena, there was a need for closer coordination and refinement of aircraft control and use. Some of these lessons would not be fully appreciated until after the commencement of hostilities two months later.

Imminent Thunder also revealed the difficult and complex state of communications. As fortune would have it, 1990 was a transition year for Marine Corps communications. For I MEF's chief communicator, Colonel Robert G. Hill, the assistant chief of staff G-6 for communications and computers, the exercise, and indeed the entire Gulf operation, was a constant scramble to balance scarce equipment against the needs of a force spread far beyond the distances specified in doctrine. For example, although computer-compatible, high-speed digital switching equipment was replacing older analog switching gear, both types were still in service. This complicated the interface or "connectivity" of the two systems both internally and with the outside. Within the force, there was great reliance on voice communications conducted via venerable workhorse high (HF) and very high frequency (VHF) radio. High frequency suffered from its traditional problems of fading and noise while VHF was limited to line-of-site ranges. Digital secure voice telephones (DSVT-68) were in use, but demand exceeded supplies. Some of Hill's enterprising subordinates partially made up the shortfall by stripping secure executive telephones, General Electric STU IIIs, from offices in the U.S. and wiring them into the Saudi international telephone system. The clarity of this secure secondary network was actually better than the primary military Autovon link.

The exercise also proved the worth of the latest technology. The linkup of computers through local and wide area networks, man-pack AN/LST-5 satellite communication (SatCom), and encrypted facsimile (secure FAX) all functioned well. To solve the problem of navigating on a featureless desert, the hand-held Hughes Position Locating and Reporting System (PLRS) gave users a precise

location. The set also transmitted their position and messages back to the division command post, as long as their antenna was within line-of-sight of a master or repeater station. To supplement PLRS, the force acquired a batch of 128 Trimpack Global Positioning System (GPS) AN/PSN-10(V) navigation receivers. These small, 4.2-pound commercial devices used the course acquisition signals from constellations of navigation satellites to locate the user within 25 meters. To boost intratheater communications, CentCom assigned six super-high-frequency, digital, multi-channel TRC-170 teams from the U.S. Army Europe's 11th Air Defense Signals Battalion.

Even so, during Imminent Thunder the lack of full coordination of communication requirements and frequency assignments led to crossed channels and at times prevented communication between some units and organizations. While the coordination problems could, and would be, ironed out, it was clear to General Boomer and Colonel Hill that the limitations of communication equipment were a major challenge for the expanded force.[19]

Host Nation Cultural Issues

As the Saudis adjusted to the presence of Marines in the Eastern Province and Jubayl, the 3d Civil Affairs Group, soon to be reinforced by the Army Reserve's 403d Civil Affairs group from Syracuse, New York, stepped up contacts with government, business, and law enforcement officials. The group was able to reduce one potentially lethal danger to the force during missile or air attack by convincing manufacturers to limit the manufacture and storage of hazardous chemicals like chlorine and anhydrous ammonia in the industrial city of Jubayl. The group also made plans with ArCent's XVIII Airborne Corps for the handling of up to 120,000 civilians who might be displaced from the northern part of the Eastern Province.

In general, relations with the host nation steadily improved as time passed. Marines at all levels seemed genuinely respectful of the rigorous tenets of Islamic culture whenever they met Muslims.* As an example, the 215th Marine Corps birthday was celebrated on 10 November, but without the traditional toasts. Strict no-drinking, no-liberty policies no doubt helped relations, but the isolation of most Marines in remote forward areas or in camps was also a factor. A lack of diversions underscored the situation. There was no television for most Marines and few newspapers. To provide a modicum of relief, the command opened a recreation center with a pool, snack bar, and weight-lifting equipment donated by Mr. Arnold Schwartzenegger, a popular film actor and

---

*Islam, meaning "surrender to God's will," is one of the world's great religions. Its sacred scripture is the Koran (Quran) which was first revealed by the Prophet Mohammed (ca. 570-632). Muslims believe in one God, in angels, in the revealed books, in the prophets, and in a Day of Judgment. Islam has obligatory duties known as the Five Pillars: the profession of faith, praying five times daily, paying of alms (*zakat*), fasting at certain times, and pilgrimage to Mecca (*hajj*). Islam is a total way of life and a body of religious law, the *shariah*, governs all conduct. In Saudi Arabia *shariah* is the basis for civil law.

world-class body builder, in one of the Jubayl Camps on 4 November. It was used by slightly over 1,000 Marine and British patrons a day until the force moved north for the offensive. Many American families in the expatriate housing compounds at Jubayl and Ras Tannurah also opened their homes to Marine troops for a shower and dinner in "Operation Scrub and Grub." A lucky few got to go on board a cruise ship, the *Gulf Princess*, docked at Bahrain. For most Marines, however, an occasional pick-up ball game or video movie was the extent of recreation in Saudi Arabia.

Perhaps the most difficult area of Saudi-U.S. relations was the clash of driving cultures and resulting traffic accidents. The Saudi road network along the coast was excellent, but Marines were frightened by the fatalistic habits of the local drivers, some of whom were unlicensed and inexperienced. Marines saw numerous examples of speeding and passing two abreast on two lane roads. Inevitably, there were tragic accidents that resulted in the deaths of Saudis and Marines.

The only formal protest ever made about Marine conduct developed as a result of a Cable News Network broadcast. Although it was illegal to receive the network in the kingdom, the Eastern Province Area Commander raised his concern to Lieutenant General Boomer of possible Iraqi propaganda exploitation of one of its broadcasts. A clip showed a touch football game, lightheartedly named the "Scud Bowl," between Marine and Navy females at an enclosed Marine area. The players wore typical American physical recreation clothing, shorts and T-shirts, and were being observed by male Marines. By contrast, Saudi law and custom required that women appear in public clad in head-to-foot attire accompanied by a male family member.

Logistics: the Birth of 'Saudi Motors'

Colonel Raymond A. List was General Boomer's assistant chief of staff for logistics with 30 years of service as an artillery, communications, and logistics officer. As the force began its expansion, one of List's greatest concerns was overland transportation. Doctrinally, the Marine Corps planned for moving support no more than about 50-80 kilometers from a beachhead port. Faced with double and triple these distances, and this was only the beginning, List and Brigadier General Brabham, commander of the 1st Force Service Support Group, found themselves with an acute shortage of "line haul" surface transport. To make matters worse, the mileage being put on tactical vehicles was rapidly increasing. They now resorted to a series of practical if somewhat unconventional actions to solve the problem.

The most orthodox form of help came from the CentCom itself. The assistant chief of staff for logistics, Lieutenant General William "Gus" Pagonis, USA, directed ArCent to supply MarCent with the first of an eventual total of 246 trucks, mainly 5,000-gallon tankers. Next, List appointed the I MEF Supply Officer, Lieutenant Colonel Timothy "Trucks" M. Taylor, as the force's truck "czar." Taylor began leasing as many civilian trucks as he could find.

As reinforcements began to flow in and displace northwards, virtually every truck in the kingdom was thrown into some kind of use regardless of its age or mechanical condition. By February, Taylor had managed to obtain 1,414 assorted trucks, although at any given time only 30-50 percent of these were operational. While most were tractor-trailer combinations, there were also some 50 colorfully decorated 10-ton lorries which the Marines dubbed "circus trucks." To transport unit personnel, the Saudi government commandeered on behalf of the force the first of 214 city and interurban buses belonging to the Saudi Public Transport Corporation. To minimize wear and tear on tactical vehicles, 105 rental cars were eventually put in service in the rear areas. As part of the allied effort, the governments of Japan and Germany also donated a number of four-wheel-drive passenger vehicles in the form of Toyota Landcruisers, Mitsubishis, and Jeep Cherokees, some of which would see service in combat. The MarCent share was 465 and I MEF received its first allotments of these in November. The whole civilian vehicle operation itself was generically termed "Saudi Motors." Fortunately, fuel supplies were good. There were plentiful supplies of locally refined kerosene-based Jet A1 fuel, normally used in commercial airliners, which powered aircraft and vehicles alike.[20]

Another logistics issue arising during the buildup was ammunition. To speed in-country stockpiling during November, ammunition was off-loaded from four ships including three vessels assigned in support of the 4th Marine Expeditionary Brigade. General Schwarzkopf's established goal was 60 days of ammunition for offensive operations. By 22 November, the force had attained 30 days of ammunition. To maintain flexibility for future operations, the practice of ammunition container "unstuffing," the breaking down of loads, ceased. To manage competing requests for ammunition, Colonel List established a single point of contact in the office of the I MEF ammunition officer. Finally, additional forward ammunition storage points were built by SeaBees in the northern MarCent area to sustain future offensive operations. Each was intended to provide Marine forces with ten days of ammunition.

Among other duties, the I MEF comptroller, Colonel Robert W. Hansen, oversaw the complicated tasks of leasing of vehicles and facilities. Nothing in his training or background prepared him for the methods of doing business in the Middle East. For a start, Hansen felt that Saudi businessmen did not really seem to understand the concept of leasing equipment. Instead, they preferred to buy items with a single cash payment. Marine Corps regulations prohibited the purchase of major items of equipment with Operations and Maintenance funds, and the duration of the force's stay in-country could not be properly estimated. Initially, there were few alternatives to expensive leases whereby the entire cost of items, principally vehicles, were amortized over rather short terms of 90 to 180 days. Hansen soon brought over contracting officers who initiated competitive bidding which greatly reduced leasing costs.

On 1 November 1990, the Government of Saudi Arabia assumed all financial obligations incurred by MarCent for in-country facilities, fuel, food, domestic transportation, and water. Further, the Saudis directly reimbursed the U.S. Treasury the $10-12 million spent in October in these areas, mainly for leases

Ships of Maritime Pre-Positioning Squadron 2 unload at the Commercial Port of Jubayl in late November 1990. The 1st Force Service Support Group operated the port during the campaign. All ships of the Maritime Pre-Positioning Force were named after Marine holders of the Medal of Honor. In the foreground is MV 1stLt Alex Bonnyman *(T-AK 3003). The MPF ships invariably used their own cranes to unload; the port's crane operators had all been sent down to the port at Dammam to offload U.S. Army shipping.*

of facilities. While Hansen welcomed relief from these burdens, several issues arose due to the transition. Procurement actions and payment schedules from the Saudi government were unclear, which caused difficulties for some contractors. Moreover, because of the rapid buildup, scarcities of supplies and materials of all sorts arose as the inventories of local sources diminished.

A Presidential Visit

Just before the arrival of I MEF's reinforcements, Lieutenant General Boomer and his Marines hosted the President of the United States and Mrs. George Bush during a Thanksgiving Day visit on 22 November 1990. General Boomer escorted the couple to the 1st Marine Division forward command post where the President made a speech reiterating his commitment to defend Saudi Arabia and remove Iraqi forces from Kuwait. The presidential party then dined there with individual troops of the force. To the delight of Marines about her at the austere site, Mrs. Bush took her meal seated on a pile of sandbags.

Reinforcements Arrive

On 10 December 1990, the main bodies of I MEF's reinforcement began arriving at Jubayl Naval Air Facility at the rate of about 1,000 troops per day. They flew in via aircraft of the U.S. Civil Reserve Air Fleet, the Military Airlift Command, and other chartered transports. Also arriving at Jubayl were British reinforcements, many of whom came on Soviet Aeroflot Airlines charters. More than one Marine noted the heretofore unthinkable sight of British troops disembarking from Soviet aircraft at a Marine base in Saudi Arabia. On 13 December, Maritime Pre-Positioning Squadron 1 docked at the Commercial Port of Jubayl carrying equipment for another Marine Expeditionary Brigade. To prevent backlog at the port, Marine, British, and ArCent units used a streamline plan developed by 1st Force Service Support Group to efficiently move their equipment directly to the field. By 15 January 1991, all of the reinforcement personnel and their equipment were in-theater.

The force's second maneuver element was the 2d Marine Division from Marine Corps Base Camp Lejeune, North Carolina, under the command of Major General William M. Keys. A bluff infantryman with a bulldog look, Keys had commanded a company, battalion, and regiment over a 30-year career. He held the nation's second and third highest awards for gallantry, the Navy Cross and Silver Star Medal, respectively. General Keys temporarily established his command post at a workers' camp on the outskirts of Jubayl that had previously been used by the 1st Marine Division. By 28 December units of the division had deployed to the "Triangle," a 600-square-kilometer area north of Abu Hadriyah and An Nuayrihah.

At the same time, most of the East-Coast-based 2d Marine Aircraft Wing arrived in-theater to reinforce Major General Moore's 3d Marine Aircraft Wing. The wing now had 32 aircraft squadrons and was nearly as large as the 1st Marine Aircraft Wing "superwing" of Vietnam of the 1966-70 era.

To accommodate his offensive scheme of maneuver, General Boomer organized combat service support into task organizations at the force level. The 1st Force Service Support Group commanded by General Brabham assumed the general support role for the force from port to combat service support area. The newly arrived 2d Force Service Support Group under command of Brigadier General Charles C. Krulak was organized as the Direct Support Command (DSC). This command was responsible for direct support of each division and forward aviation unit from the combat service support area to the battlefield. To meet the requirements of each mission, there was a certain amount of asset exchange; for example, the DSC swapped much of its line haul capability with 1st FSSG for its combat engineer assets which would be needed for breaching and supply route preparation.

The 1st Surveillance, Reconnaissance, and Intelligence Group also received reinforcements from the 2d SRIG from Camp Lejeune and the Reserve. For the first time in its history, a major Marine force had non-U.S. military corps-sized units on both its flanks. Providing the Arab allies with fire control and support-

Col John A. Woodhead III, Chief of Staff, 2d Force Service Support Group, left, and BGen Charles C. Krulak, Commanding General, Direct Support Command

ing arms liaison teams was the mission of the 1st Air and Naval Gunfire Liaison Company (ANGLICO), commanded by Lieutenant Colonel William C. Grubb, Jr. Most teams went to the Joint Forces Command, East on the force's right flank under command of Major General Sultan Adi (Al-Mutairi). Reinforcing the company were five teams from the Reserve 3d Air and Naval Gunfire Liaison Company based at Naval Base Long Beach, California.

Another of the SRIG units was the 1st Radio Battalion under command of Lieutenant Colonel Thomas J. Flaherty. It now contained nearly all of the radio combat assets of the Marine Corps. In the campaign ahead, the battalion would render invaluable if unheralded service. Finally, all of the analysts of the various SRIG units, plus individuals brought from elsewhere, joined the force's

intelligence section, now under Colonel Forest L. Lucy, to help develop the essential elements of information required for the intelligence preparation of the battlefield.

General Schwarzkopf's original strategy placed the British 1st Armour Division under the tactical control of General Boomer as a third maneuver element. This heavy British force was to constitute more than a third of MarCent's combat power, particularly in main battle tanks and artillery. As noted earlier, the integration of the British 7th Armour Brigade with 1st Marine Division had gone exceedingly well. It was therefore a disappointment to General Boomer and the staff when General Schwarzkopf notified him on 17 December that CentCom was withdrawing the British division from MarCent control and placing it with the main Central Command attack. The transfer of British forces was completed in stages by 10 January.

To partially compensate for the transfer of the British division, General Schwarzkopf ordered the 1st Brigade of the U.S. 2d Armored Division to MarCent on 10 January. The soldiers of "Tiger" Brigade, commanded by Colonel John B. Sylvester, USA, had trained together in a desert environment for about two years and brought a wealth of night vision equipment and experience as well. However, the brigade had significantly less combat power than the British forces; 116 General Dynamics M1A1 Abrams main battle tanks replaced approximately 170 British Challenger tanks and 24 M109 self-propelled 155mm guns replaced 72 British 155mm guns. Both the M1A1 and M109 were essentially similar to the Marine models. The Abrams tank featured 120mm smooth-bore guns and computerized sight and thermal target imaging systems. Even so, given this smaller force, General Boomer had to reduce I MEF to two reinforced division maneuver elements. He left the issue of an operational reserve in abeyance for the moment. Boomer placed the Tiger Brigade with the 2d Marine Division which would conduct MarCent's main attack. This reinforcement increased that unit's total of tanks to about 257; thus, General Keys commanded the heaviest Marine division ever to take the field.

Several logistical complications came with the transfer. Whereas the British forces had been essentially self-supporting, apart from food, fuel, and water, the Tiger Brigade had no similar logistic support. Neither could the brigade bring with it the equivalent of a third of a division's communications and intelligence assets since these could not be task organized. Mitigating the situation was the commonality of Tiger Brigade's main weapons systems with those of the 2d Marine Division. The issues were pragmatically resolved at a series of conferences where it was decided that ArCent would "cross-support" Tiger Brigade in clothing, organizational equipment, and ammunition, while MarCent would provide food, fuel, personal items, and general medical support. The Marines also supplied all repair parts and components except for Army-unique items.

These communications and logistics issues led to a dispute over the command and control of the brigade, however. General Schwarzkopf proposed in late December that the brigade be placed under Lieutenant General Boomer's operational control, but be supported by ArCent. As this was being discussed

MajGen William M. Keys, left, commanding general of the 2d Marine Division, confers with Col John B. Sylvester, U.S. Army, commander of 1st Brigade, 2d Armored Division. The "Tiger Brigade" reinforced the Division and seized the vital road intersection chokepoint above Al Jahra on the evening of 26 November 1991. It was not the first time units of the two divisions had fought together; 73 years earlier, the 6th Marines had reinforced the Army's 2d Division in France during World War I.

by the CentCom and MarCent staffs, Lieutenant General Yeosock, the commander for U.S. Army Forces Central Command, became concerned that MarCent might violate Tiger Brigade's unit integrity. General Yeosock therefore requested that MarCent's control be tactical rather than operational. Although these concerns were misplaced, General Schwarzkopf eventually resolved the issue by placing the brigade under General Boomer's operational control.

The Beginning of Offensive Planning

The force continued in its defensive mission during the reinforcement period; i.e., the protection of the critical port and oil facilities of Jubayl and Bahrain. With offensive operations nearing certainty, General Schwarzkopf ordered MarCent to be prepared to transfer defense of its sector to Saudi-controlled forces if required. On 19 December, the force received General Schwarzkopf's written concept for offensive operations. Colonel James D. Majchrzak's battle staff planning group had stayed up with the CentCom planners, and they found that it contained no surprises. The MarCent planning group had been working

all along on the premise that I MEF would conduct a supporting attack in coordination with U.S. Central Command and the Arab Joint Forces/Theater of Operations forces.* The code name of the operation to eject Iraqi forces from Kuwait was "Desert Storm."[21]

In its initial version, the force's plan involved a link-up with naval amphibious forces after it breached the Iraqi defenses in southeast Kuwait. To develop and coordinate these aspects, on 11 December and again on 3 January 1990, Lieutenant General Boomer met with Vice Admiral Stanley R. Arthur, who succeeded Vice Admiral Mauz as Commander, U.S. Naval Forces Central Command, and Major General Harry Jenkins, commanding general of 4th Marine Expeditionary Brigade.

Throughout the campaign, General Boomer met with his principal commanders weekly to develop and test out his concepts and plans in an informal, give-and-take atmosphere. At the meeting on 15 December, the generals discussed the various aspects of the draft plan prior to the election of a course of action. Each officer was acutely aware that Marine forces would be attacking into the densest concentrations and most heavily obstructive of the Iraqi defenses. As he had all along, General Boomer made it clear that his overriding concern was to prevail in the assault and liberation of Kuwait at the minimum cost of Marine casualties. The Center for Naval Analyses used a casualty prediction model (PRECAS) to estimate that a seven-day ground campaign would result in a total of 9,667 direct combat casualties and 10,552 overall.[22] In the face of these statistics, General Boomer constantly sought to improve his scheme of maneuver. His initial plan was just that; it was liable to be changed at any time to meet his goal of minimizing casualties. General Boomer enjoyed the confidence of his operational commander who shared similar concerns. When the plan was subsequently changed not once but twice, General Schwarzkopf gave his full support. On the night of 31 December, the battle staff planning group completed Operation Plan Desert Storm for the commanding general's signature.

Warfighting and the Force

In the course of developing his plans for the offensive, Lieutenant General Boomer espoused a philosophy of warfighting known as maneuver warfare. It succeeded the more traditional form of attrition warfare whereby opposing forces pursued "victory through the cumulative destruction of the enemy's material assets by firepower and technology," often at the expense of large numbers of casualties.[23] Attrition warfare's other features included pitting strength against strength, massed and accurate fires, ponderous movement, and centralized

---

*There was never much standardization in references to the Arab allies. They were known in operations plans as Joint Forces/Theater of Operations, but this ponderous designation was usually supplanted by terms like Coalition Forces, Pan Arab Forces, multinational forces, or by their various commands, such as the Joint Forces Command-East (JFC-E).

control with an emphasis on procedures and control. General Boomer, all of his major subordinate commanders, and their principal staff officers had served in combat in Vietnam under that system.

As attrition warfare was superseded in the 1980s, there was much discussion within the Marine Corps as to what actually constituted maneuver warfare. Nonetheless, there was general agreement that its characteristics included attacking weak points by strength, a high tempo of operations, and decentralized control with the object "to shatter the enemy's cohesion, organization, command and psychological balance."[24] Further, maneuver warfare required a higher level of military judgment and was riskier than attrition warfare.

In the forthcoming campaign, General Boomer sought to shorten his own force's cycle of observation, orientation, decision, and action, the "OODA loop," to less than that of the Iraqis. The decision making vehicle for this was intelligence preparation of the battlefield. This system provided an easily grasped series of milestone decisions as the battle progressed. In addition, General Boomer wanted to deceive and confound the enemy's command and control system so that his opponents would not be able to form an accurate picture of what was happening on the battlefield. Accordingly, Boomer ordered the enemy's command and control nodes to be struck by air and electronically spooked, before and during the attack. By assaulting the enemy at his weakest points, General Boomer hoped to minimize his own casualties. By rapidly getting his own forces behind the enemy's first lines of defense, he hoped to create the conditions for making surrender or capture appear inevitable to the Iraqis. While he could not estimate with any accuracy the will of the enemy to fight, he would do all that he could to demonstrate to the enemy the futility of doing so. As he put it to his command element nine days before the ground campaign: "We will go quickly, we will go violently."[25]

To accomplish this, General Boomer directed that every commander down to the lowest level understand exactly what his intent and objectives were. Each commander on the battlefield received "mission-type orders" that empowered him to make the necessary decisions to accomplish his mission. If unforeseen circumstances arose, such as a sudden opportunity or a counterattack, each commander was to deal with them immediately rather than buck a decision up the chain of command over tenuous means of communication. If necessary, commanders could even cross the boundary line of an adjacent unit or conflict with a supporting arm.

Paradoxically, it might seem that General Boomer's concept required that he give up some of his own discretion or power. In the fast-moving campaign he envisioned, this was inevitable. No command and control system then existed that could paint an instantaneous and accurate picture of what was happening on a rapidly changing battlefield. However, he had confidence in the good judgment of his commanders, just as General Schwarzkopf had in his own. As will be seen, General Boomer also exercised his own judgments and decisions that affected the conduct of the campaign.

The First Plan

On 1 January 1991, Lieutenant General Boomer signed USMarCent Operation Plan Desert Storm. In consonance with General Schwarzkopf's plan for Desert Storm, the I MEF plan consisted of four phases. The first three phases were a combined air campaign that primarily involved the 3d Marine Aircraft Wing, which received its theater air tasking orders from the Joint Force Air Component Commander. The air campaign included the striking of targets selected by MarCent in its assigned future area of operations in Kuwait. During this period, I MEF ground combat and combat service support elements were to move into forward assembly areas. The four phases of Operation Desert Storm were:

1. Phase I, a strategic air campaign to attain air supremacy, attack Iraq's warmaking capability with missiles and aircraft ordnance, cut its supply lines, and destroy the Republican Guard Forces Command. This phase was expected to last three to six days.

2. Phase II, the attainment of air supremacy in the Kuwait Theater; i.e., the suppression of the enemy's integrated air defense system sufficiently to permit tactical air and attack helicopter operations. This was planned to take two days.

3. Phase III, preparation of the battlefield to reduce the combat effectiveness of the enemy in the Kuwait Theater of Operations. The goal was to reduce tanks, artillery, tracked vehicles, and infantry in the breach area by 50 percent and reduce Frog missiles and multiple rocket launchers by 100 percent. This was to last eight days. The duration of each phase was notional, and General Boomer was informed on a "close-hold" basis that the air campaign would last at least 30 days before commencement of any ground campaign.

4. Phase IV, the ground offensive campaign. General Boomer's initial concept operations for the liberation of Kuwait comprised four stages: penetration, exploitation, pursuit, and consolidation.

    a. Stage A was to be a rapid penetration of forward Iraqi defenses by the 1st Marine Division between the Al Wafrah Oilfield and the coastline, which was to hold open the shoulders of the breach while assisting forward passage of the 2d Marine Division.

> b. In Stage B, 2d Marine Division was to pass through 1st Marine Division and effect a link-up with two brigades of Marines of a NavCent landing force whose first objective was to be the Kuwaiti port of Ash Shuaybah.
>
> c. In Stage C, both divisions were to destroy Iraqi forces in-zone and seize two I MEF objectives: the area surrounding the Al Jahra main supply route intersections, plus another blocking position about 10 miles southwest of Al Jahra.
>
> d. In Stage D, Marine forces were to prevent Iraqi withdrawal from southeastern Kuwait and to be prepared to assist forward passage of Arab forces to take Kuwait City.[26]

The decision in favor a single-division breach was because of the limited engineering equipment available as well as the brief time available for 2d Marine Division to conduct training. To resolve the breaching gear issue, the Marine Corps Research, Acquisition, and Development Command at Quantico actively pursued additional breaching equipment but was frustrated by the long lead times required. As it turned out, by mid-February, enough breaching equipment was in-theater to permit a second set of breaches.

Forming a precise picture of the obstacle belts was a difficult task as General Boomer lacked detailed imagery and first-hand reconnaissance. The intelligence community believed that the barriers contained antipersonnel, antiarmor, and possibly chemical mines surrounded by barbed wire. Imagery revealed that substantial amounts of oilfield piping had been placed in trenches in front of parts of the first barrier. These were rigged to sources of crude oil that could be ignited to create a flaming barrier.

The techniques of breaching obstacles ranged from the conventional to untried schemes. Each received great scrutiny. In November, Marines tested aerial fuel/air explosive weapons (FAE) against mines on a nearby range. Unfortunately the overpressures generated were not high enough to reliably detonate mines and had little effect on wire obstacles. During the air campaign, U.S. Air Force Boeing B-52 Stratofortress heavy bombers made several strikes against sections of the obstacle belts, but they had little effect. Thus, aircraft delivered means would not be a major breaching aid.

This left a combination of single and triple-segment line charges flung across the belts by rockets, chain flails attached to armored Caterpillar D7 bulldozers, and track-width mine plows attached to M60A1 tanks and D7 bulldozers. In addition, there was the traditional and hazardous technique of manually probing and disarming mines. The line charges experienced a number of fuse failures

during testing. After taking steps to improve fuse reliability, Marine combat engineers retained them for use in the assault. However, the engineers were not able to adequately test the chain flail bulldozers which they nicknamed "Ninja Dozers." Every Marine understood the inherent dangers of the obstacle belts. While they believed they could handle mines, barbed wire, and even fiery trenches, the time required to do so meant that the assaulting forces would be vulnerable to the enemy's many indirect fire weapons.[27]

Force ratios were another worry. Conventional planning normally required at least a 3:1 ratio of attackers to defenders to assure success. In a preliminary I MEF analysis made on 23 December, MarCent and NavCent amphibious forces would not attain parity with the Iraqis except in anti-tank weapons. The relative strengths of MarCent forces, including brigades afloat, compared to estimated Iraqi forces in both southeastern Kuwait and in the MarCent sector were:

Item	MarCent	SE Kuwait	MarCent Area
Personnel	85,000	202,355 (1: 2.4)	98,755 (1: 1.2)
Tanks	389	1,596 (1: 4.1)	1,137 (1: 2.9)
Artillery	264	1,206 (1: 4.6)	648 (1: 2.5)
APC	969	1,309 (1: 1.4)	922 (1: 1.1)
Antitank	725	324 (2.2: 1)	108 (6.7: 1)

For I MEF's assault to succeed, it was imperative that the force achieve overwhelming ratios locally at the breach points. At the same time, the force had to prevent Iraqi reinforcements from closing. One key to these requirements was the use of deception to prevent the Iraqi commanders from forming an accurate picture of the situation on the battlefield.[28]

Deception and Psychological Warfare

Deception planning began in mid-December when the force received a draft of the CentCom deception plan. General Schwarzkopf wanted to deceive Iraqi forces as to his intentions and the actual location and identities of his units and their sectors. Colonel Charles M. Lohman, the force operations officer, formed a planning cell under Lieutenant Colonel Franklin D. Lane that included representatives of the principal staff, major subordinate commands, the psychological operations support element, the electronic warfare section, and the 1st Radio Battalion. The cell based its planning on several assumptions: that real assets would be used, that the enemy would be able to interpret the deception, that the main deception effort would have to occur prior to the first stage of the ground campaign, that there would be no more than a 24-hour advance notice of that stage, and that human resources and electronic intelligence were the main and secondary enemy collection capability. By 23 December, the cell had developed three deception courses of action: an attack along the Iraqi III and IV Corps boundary near Al Manaqish to seize objectives

near Al Jahra, an administrative backload of forces at Jubayl or Mishab for shore-to-shore operations on the southern Kuwait coast, a deliberate defense in-zone to anchor CentCom's main attack to the west; i.e., a hammer and anvil concept. General Boomer selected a combination of the first and third for further development.[29]

The force's offensive planning also envisioned psychological operations. This need arose out of the desire to destabilize the Iraqi forces along the obstacle belts and to manage a civilian population, some of whom might be Palestinians who had allied themselves with the Iraqis. To accomplish this, on 5 January CentCom placed Element 9-1 of the U.S. Army's 8th Psychological Operations Task Force in general support of MarCent. The element commander, Major Thomas H. Gerblick, USA, had previously completed offensive planning in December and identified the need for additional assets to support MarCent operations. He formed 46 Army and 27 Marine personnel plus Kuwaiti linguists into 26 loudspeaker teams including one carried by helicopter. This represented about 40 per cent of the theater "PsyOps" assets. The MarCent share was the greatest, since the force would be attacking into the highest concentrations of enemy forces and into built-up areas. The teams deployed forward with the ground combat elements and used prerecorded tapes covering various situations as well as live broadcasts by Arabic linguists.

Moving to the Offense

On 5-6 January 1991, Lieutenant General Boomer moved his command post 166 road kilometers northwest. The new location of "MEF Main" was a few kilometers west of Aramco's Safaniyah (Ras As Saffiniyah) oil separation and water distillation plants on the coast, about 67 kilometers southeast of the Kuwait border. The site was a small workers' camp abandoned in 1984 and it required minimal preparation. Its placement on a slight rise favored line-of-sight communication. Certain staff functions including parts of G-1 and G-4, remained at Jubayl. Now for a brief time, the force headquarters was forward of its major subordinate commands.

The Jubayl command post at the "Police Station" became I Marine Expeditionary Force (Rear) under the command of Major General John Hopkins. To defend the sprawling Jubayl Vital Area and other key points from both conventional and terrorist attack, Boomer assigned the 24th Marines, the two-battalion Reserve regiment from Kansas City, which had just arrived from Camp Lejeune. Conventional doctrine called for rear area security to be drawn from supported units, and up to this point 1st Force Service Support Group had provided the troops for the mission. But now General Boomer wanted to dedicate that group's specialists solely to the tremendous task of shifting combat service support north for the offensive. The 24th Marines were a ready-made solution to the problem of providing security to many dispersed sites. Each of its companies was capable of independent duty and the companies were unusually cohesive, having trained together for years at local centers throughout

the mid-west. Colonel George E. Germann, the regimental commander, deployed units in platoon and company strength along a 200-mile chain of locations from Bahrain to Mishab, shifting them promptly as needs changed.*

Major General Richard D. Hearney, who commanded the 2d Marine Aircraft Wing, most of which had just arrived in-theater, came to Safaniyah as the force Deputy Commanding General. Up to this time, General Boomer had not had the benefit of an aviator general officer on his staff. In Hearney, he not only had an experienced flyer--he had been one of the first Harrier pilots--but one with an extensive background in both aviation and ground command and control.

The commander of U.S. Marine Forces Central Command (Rear) remained at Riyadh and was responsible for direct relations with CentCom. Major General Norman E. Ehlert, also an aviator, succeeded Major General Pearson on 18 January.** Ehlert met daily with General Schwarzkopf and the CentCom to discuss strategy and issues. The arrangement suited General Schwarzkopf, who later remarked: "(W)e talked to each other so much I never made a single campaign decision that I didn't seek your [Pearson's and Ehlert's] views on . . . so I was very comfortable . . . that Walt (General Boomer) knew exactly how I planned to conduct the campaign . . . ."[30] To coordinate amphibious planning, Major General John J. Sheehan assumed duties as Commander U.S. Marine Forces Central Command (Forward) on board Vice Admiral Arthur's flagship, USS *Blue Ridge* (LCC 19). As will be seen, Sheehan's publicized presence and provocative title later played a role in General Schwarzkopf's deception plan. Lastly, General Boomer redesignated force activities at Camp Pendleton, California as I MEF CONUS (Continental United States).

Both of the force's ground combat elements moved north in early January. General Myatt, newly "frocked"*** in the rank of major general, moved his 1st Marine Division command post from south of Manifah Bay westwards into the former ArCent area to positions 60 kilometers west of Mishab. General Keys

---

*The initial dispositions of Col Germann's far-flung command were: Regimental Headquarters to the Rear Area Operations Center (RAOC) at the Commercial Port of Jubail. The 2d Bn (LtCol Johnson) deployed Co D to Ammunition Supply Point #1 west of Jubayl, Co E to the port at Mishab, and Co F to Safaniyah. Wpns Co and a provisional rifle company from H&S Co went to NAF Jubayl. The 3d Bn (LtCol Guwilliams) deployed H&S Co and Co I to the Ras Al Gahr desalinization plants, Co G to Shaikh Isa AB, Bahrain Co H to Kibrit (on 31Jan91), Co I to King Abdul Aziz NB, Jubayl, and Wpns Co to Camp Gray, Jubayl.

**MajGen Pearson's "temporary" assignment as ComUSMarCent (Rear) stretched over five months. Before he returned to resume charge of the Marine Corps Research, Acquisition, and Development Command at Quantico, he flew a number of combat air patrols over the northern Gulf which included one near engagement with Iraqi fighters near the Kuwait coast on 15 November. He also flew combat missions over Iraq on 17 January.

***"Frocking" accorded an officer the honor and title of the next higher rank, but without its pay and allowances. This is often done if an officer was selected for promotion and serving in a billet for that rank when there was as yet no vacancy in that category on the Lineal List of Officers.

deployed the 2d Marine Division just to the northwest of them. Both divisions remained there until moving into their tactical assembly areas in mid-February. At the same time, General Moore moved his 3d Marine Aircraft Wing headquarters to NAF Jubayl. Moore also began displacing his two helicopter groups north, but not until going through some travail regarding airfields.

Even though the displacement of General Yeosock's ArCent units westward began in December, it was not completed for some time due to logistical constraints. A number of Army enclaves remained in the expanded MarCent area of operations near training areas and ranges. The main effect of this was to impinge on the ability of the 2d Marine Division to train. The last enclaves dissolved on 17 January.

Along with the generals there came a final influx of staff to flesh out the force headquarters staff. The first of these was Colonel Billy C. Steed, who arrived on 14 December. Steed cut short a tour as commanding officer of the 25th Marines at the personal request of his former commander, General Boomer. He was a ruddy-faced 34-year veteran with a Mississippi drawl who had attained the rare distinction of a battlefield commission in Vietnam as a sergeant. Boomer had valued his counsel in combat before and made Steed his assistant chief of staff for operations, G-3.

At Safaniyah, General Boomer instituted an evening operations briefing to supplement his morning staff meetings. The daily morning meetings began at 0800 with Boomer striding into the quonset-style briefing tent and giving his usual greeting: "Morning, folks, please sit down." Others present were his deputy, the principal and special staff members, liaison officers, senior staff, and the force's senior enlisted Marine, Sergeant Major Rafe J. Spencer. The group typically numbered 30 to 40 or more and was inclusive rather than exclusive. Contrary to a current trend of compartmentalizing and over-classifying information, Boomer wanted no pieces withheld from his staff that could help them in their duties. He also desired that the meetings help forge bonds within his staff which had at last reached its wartime strength.

Boomer's fastwitted and articulate chief of staff, Colonel Eric Hastings, conducted the meetings. Hastings was fully capable of either stimulating give-and-take exchanges among the staff or metaphorically yanking them up by their necks, depending on the situation. The unruffled and fluent senior watch officer of the combat operations center, Lieutenant Colonel Max A. Corley, invariably gave the current operations brief followed by principal and special staff reports. After this, Hastings offered the staff a final challenge: "Anymore Oh-by-the-ways?" and then turned it over to his commander. Lieutenant General Boomer talked in measured words that reflected his current state of mind and perspective. On occasion he could be sharp, but, mindful of the continual pressure on them all, more often he was solicitous. As mentioned earlier, General Boomer usually met at least once a week with his generals for frank discussions of issues affecting the command, particularly future operations. Out of meetings at Safaniyah over the next five weeks came fundamental decisions that changed the course of the force's campaign.

Supporting the Move North

In early January, the MarCent area of operations was significantly expanded north to include the port and airfield of Mishab (Ras Al Mishab), 50 kilometers southeast of the Kuwait border. The Arab forces of the Joint Forces Command-East began assembling in the sector to the north for their attack into Kuwait along the coastal main supply route. Moroccan troops provided additional external security for the Safaniyah area. To the west of Mishab, the MarCent area extended over 125 kilometers and included the western half and all of the north-south portions of the Kuwait border along the heel.*

Brigadier General Krulak established the Direct Support Command at Combat Service Support Area 1 behind earthen blastwall berms on an otherwise featureless desert about 57 kilometers west of the coast highway at Mishab. This base quickly became known as Kibrit after Abraq al Kibrit, a tiny Bedouin settlement with a few trees and ramshackle houses about 20 kilometers further west. Significantly the base was only 52 kilometers south of the border and ahead of both divisions for the moment, so Krulak had most of the billets and workspaces put in underground revetments. Within a few weeks, Kibrit had a 470-bed hospital, 1.8 million gallons of fuel storage, and 15,800 tons of ammunition. Marine engineers and SeaBees widened the dirt track leading past it to eight lanes and improved a disused 6,500-foot dirt airstrip to accept turbo-prop Lockheed C-130 Hercules transports. Under normal circumstances, the Kibrit Main Supply Route was a hardpacked marl road, but with heavy use, traffic on it produced either choking clouds of talcum-like dust or small seas of sticking mud in low areas known as *sabkha*'s that presented challenges to driver and engineer alike.

The winter rains had now begun. Even though the area's annual average was about four inches, as was typical in the desert, it arrived either nearly all at once or not at all. The winter of 1990-91 was much wetter than normal, possibly exacerbated by the oil well and refinery fires the Iraqis began setting in February. During one storm in early January, 3.6 inches fell on Safaniyah which flooded out excavations for fortifications and the Direct Air Support Center. The low lying *sabkha* dry lake areas that dotted the area became treacherous and untrafficable.

Of particular importance to General Boomer's offensive plan was the granting of rights to use the Mishab Royal Saudi Naval Force port and its adjacent airfield. The I MEF staff believed that port could accept AMSEA-class cargo ships of the Maritime Pre-Positioning Squadron despite its tight channel and turning basin. There were also mine and missile threats along the circuitous route around the Safaniyah offshore oil fields, so the Navy, and the civilian crews of the MPS, were understandably reluctant to attempt it.

---

*During the period, there were many references to the "Elbow" of the heel of Kuwait, but there was never any consistency as to its location; i.e., the southwest corner of the heel or the bend near Al Manaqish. Therefore all reference to the Elbow is omitted herein.

The commander of the Military Sealift Command Southwest Asia, Commodore Richard A. Crooks, was ultimately successful in developing a satisfactory shipping route into the port by having ships thread their way through the oil field. The movement of a large ship along the dangerous route into the port required a great deal of coordination: NavCent had to provide escort ships and the Royal Saudi Naval Force tug boats. On 26 January the first ship to reach Mishab was MV *Mallory Lykes*, carrying 500 containers of MarCent sustainment. It was unloaded and turned around in less than 24 hours. In early February, humble and ubiquitous Army coastal craft known as LCU-2000s also began hauling much waterborne support on regular shuttles between Dammam, Jubayl, and Mishab.

The concept of logistics support involved the pre-positioning of material at the port of Mishab and at the Direct Support Center at Kibrit. This required theater support in the form of U.S. Army and commercial line haul equipment, a tactical petroleum terminal, a fuel truck company, an offshore petroleum dispensing system, reverse osmosis water purification units (ROWPUs), and various watercraft such as the LCU-2000.

Airfields for helicopters and forward staging of McDonnell Douglas AV-8B Harrier vertical takeoff and landing jets were another issue in January. General Boomer needed Mishab's jet-capable airfield for one of 3d Marine Aircraft Wing's helicopter groups, Marine Aircraft Group 26, commanded by Colonel Michael J. Williams. Although the airfield could accommodate a helicopter group after the SeaBees had enlarged the ramp, the ground campaign required both wing helicopter groups to be forward. The only other appropriate site was Aramco's jet-capable airfield at Tanajib (At Tanaqib) 14 kilometers south of Safaniyah. Aramco, the world's largest petroleum production enterprise, was Saudi-owned, American-managed, and at times to the I MEF staff, seemed like a sovereign entity unto itself. The company refused the Marines permission to use Tanajib even though its own operations there had scaled down considerably with the threat of war. After persistent and lengthy negotiations and with time running out, General Boomer made a direct request for help to Prince Khalid, the Saudi Minister of Defense and Aviation and commander of the joint Arab forces. Prince Khalid promptly instructed that Marines be accommodated. Despite this, Aramco still declined to cooperate and commandeering the site was considered. This proved not to be necessary, and the second helicopter group, Marine Aircraft Group 16, commanded by Colonel Larry T. Garrett, moved north to Tanajib on 8 January.

Cementing the Alliance

As I Marine Expeditionary Force moved north and west, its units continued to train with the 2nd Brigade of the Saudi Arabian National Guard, the Royal Saudi Marine Corps, and, increasingly, the 8th and 10th Brigades of the Royal Saudi Land Forces with, a view toward improving interoperability. Because the 1st Marine Division occupied MarCent's right flank, its 3d Marines,

The Iraqi III Corps *expended much effort in beach defenses against amphibious landings. This beach near the northern tip of Kuwait City was typical. It included tripwire mines at water's edge and the 14.5mm four-barrel ZPU-4 weapon seen here on 1 March 1991.*

commanded by Colonel John H. Admire, conducted much of this cross-training. By doing this at the company level, Admire found that Marines and Saudi soldiers alike were able to make friendships, overcome cultural barriers, and reach understandings that would reap dividends in the campaign ahead.[31]

Other key relationships came via the 1st Surveillance, Reconnaissance, and Intelligence Group. Colonel Michael V. Brock, its commander, attached teams from his Force Reconnaissance companies and 1st Air and Naval Gunfire Liaison Company to the Joint Forces Command-East which was commanded by Saudi Major General Sultan. This multinational Arab command included elements of Saudi, Qatari, Omani, and United Arab Emirate forces who were on the immediate right flank of MarCent during the assault into Kuwait.* Few of General Sultan's disparate units had practiced supporting arms coordination to any extent before the arrival of the ANGLICO teams in the fall of 1990. These teams were responsible for coordinating and controlling supporting air and naval gunfire missions including many missions flown by Marines. After overcoming initial Saudi reluctance, 1st SRIG teams also began occupying eight observation posts along the 130-kilometer length of the heel portion of the Saudi-Kuwait border on 30 December.

At the command level, the shift from defensive to offensive operations required a more durable and effective relationship with Saudi military authorities. This led to the establishment of a host nation joint liaison team in

*The regional Saudi components were the Eastern Province Area Command (EPAC) and Northern Province Area Command (NPAC). The joint Arab components were also known as the Eastern Area Command (EAC) and the Northern Area Command (NAC).

early January with Lieutenant Colonel Ernest G. Beinhart III and Commander Ghazi Asleiten, RSNF, as the senior members. The successful effort by Marines of the force to assist in the training of the Royal Saudi Naval Forces Marine Corps led to approval by Headquarters Marine Corps to establish a permanent Saudi Advisory Group.

Refining the Plan

On 6 January, representatives of staff of the force's major units came to the Safaniyah headquarters to discuss and wargame USMarCent Operations Plan Desert Storm. General Boomer encouraged them to critically analyze all aspects of his plan so that it might be refined. Two days later, Lieutenant General Calvin A. H. Waller, USA, General Schwarzkopf's Deputy Commander-in-Chief, visited for a briefing on General Boomer's concept of operations and to present the CentCom perspective. These events resulted in pivotal meetings on 13 and 15 January when Boomer and his staff conducted map exercises and wargames of the execution phase of the plan with the commanders of the major subordinate units and their key staff. During the exercises, the 1st Marine Division commander, Major General Myatt, raised concerns about the coordination and space required for both MarCent and the Joint Forces Command-East to carry out their plans.

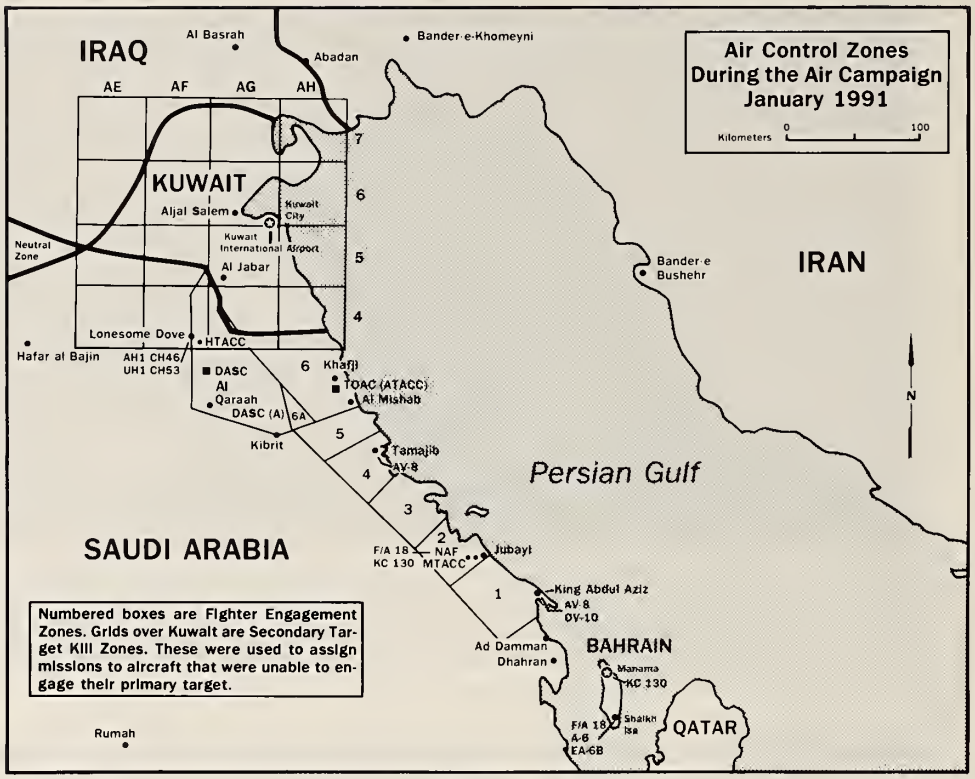
Like General Boomer, Myatt was in the habit of conducting round table discussions with his commanders and staff. In the course of one of these, his operations officer, Colonel James A. Fulks, who would later lead an infantry task force through the obstacle belts, argued convincingly that under the existing plan, too many enemy forces were positioned in MarCent's avenue of approach, thus potentially compromising the penetration and exploitation phases. Fulks wanted to revisit an earlier course of action that involved a MarCent breach between the Al Wafrah and Umm Gudair (South) oil fields in the southwest portion of the heel of Kuwait. Fulks felt that this avenue of approach was not only less defended--it bypassed the bulk of the defenders in southern Kuwait--but it also was more difficult for the Iraqis to reinforce, since only one main supply route serviced the area. It permitted rapid engagement of the operational reserve and was close to General Boomer's objective at the Al Jahra intersection chokepoint. Another factor was the Iraqi command and control system. Many officers studied it and concluded that Iraqi forces above the brigade level were not well versed in coordination with other units for political reasons. They thought Saddam Hussein viewed that as a threat to his power. Therefore, by penetrating along divisional and brigade boundaries, confusion might be sown to the benefit of Marines in the assault. General Boomer was receptive, even though logistically it was far more difficult. The clinching argument was General Schwarzkopf's continuing disapproval of an amphibious operation for reasons not yet clear. It gradually became quietly known that the commander-in-chief wanted to use the two Marine brigades afloat as part of a grand deception strategy. (These were the 4th Marine Expeditionary Brigade

The Iraqi beach defenses looking seaward from a mortar emplacement. Striped rods are aiming stakes. There are three lines of barbed wire entanglements: one is in chest-deep water near top of picture and two more are at the edge of the water, with mines in between. In the middle is part of an interlocking trenchline network built with concrete blocks and highway K-rail. Adjacent bunkers contained antitank rockets and grenade launchers.

and the recently arrived 5th Marine Expeditionary Brigade under command of Major General Peter J. Rowe). This eliminated the need for a link-up with amphibious forces. General Boomer approved the change to his plan on 16 January, the day before the start of Operation Desert Storm's air campaign, discussed later.

As noted earlier, there was no established doctrine for corps-size Marine forces with two or more maneuvering divisions. Because he envisioned a fast-moving ground campaign, General Boomer decided to have supporting arms be coordinated at the lowest possible levels to save time. The senior and final coordinating authority was the I MEF fire support coordination center under Colonel William H. Schopfel III. Each division retained its own fire support coordination center primarily for its artillery and air strikes. Both division centers were linked by voice and wide-area data networks. The fire support coordination center located at the I MEF command post assumed a "deconfliction" role to coordinate and sequence supporting arms fires on given targets and to prevent friendly fire incidents.

In air support, the plan assigned Bell AH-1 Sea Cobra attack helicopters to be in general support of the divisions for close-in fire support. The plan had Cobras on strip alert for immediate employment from forward landing zones. The control of fixed-wing aircraft within the MarCent high-density air control zones (HIDACZs) was through a single direct air support center located at the force command post or aboard a Lockheed KC-130 Hercules aircraft. The concept for fixed-wing employment involved two stacks of attack aircraft which



Combat art team head Col H. Avery Chenoweth, USMCR, put some perspective between himself and the "moated" headquarters of "I MEF (Rear), Al Jubail," located in a former police station and neighboring a mosque and its minaret. The headquarters building has manned bunkers on its roof.

were pushed through to forward air controllers (airborne) in F/A-18D aircraft (FastFACs). Each FastFAC was to run four aircraft about every fifteen minutes through his sector to attack targets just ahead of the close-in fire support helicopters. Deep air support, well beyond the maneuver area of the ground units, was under the control of the Joint Forces Air Component Commander's airborne command and control center. As will be seen, it would be Marine controllers aboard the ABCCC who did the actual controlling during the ground campaign.[32]

D-Day: The Air Campaign Begins

After Saddam Hussein of Iraq rejected a series of ultimatums from the United Nations to depart Kuwait, President George H. W. Bush, acting in accordance with resolutions passed by the Security Council of the United Nations, directed General Schwarzkopf to commence offensive operations effective at 2400 on 16 January 1991. Immediately thereafter, General Schwarzkopf and Lieutenant General Prince Khalid jointly ordered the execution of the Combined Operations Plan for Offensive Operations to eject Iraqi forces from Kuwait.

The first Marine offensive action of the war commenced at 0400 on 17 January. Marine Aircraft Group 11 conducted a coordinated night air strike against strategic targets in southern Iraq.* This strike was the largest flown by Marines since World War II and involved about 48 Marine aircraft operating from Shaikh Isa Air Base and Bahrain International Airport, plus about 20 other allied aircraft. The attackers flew dual role McDonnell Douglas F/A-18A and -C Hornets and Grumman A-6E Intruder aircraft equipped with high-resolution radar and forward-looking infrared systems. British Royal Air Force Panavia GR-1 Tornado jets also flew low-level attacks at the same time. Supporting the attackers were other F/A-18s which provided fighter coverage, tactical air launched decoys, and AGM-88 high-speed antiradiation missiles. Assisting them also were Grumman EA-6B Prowlers electronic support aircraft and U.S. Air Force McDonnell Douglas F-4G Phantom Wild Weasel radar suppression aircraft. Marine Lockheed KC-130 Hercules aerial tankers refueled the "strike packages" over the northern Gulf. The Marines struck airfields and Scud missile shelters at Tallil and Qurna, the air base at Shaibah, and a thermal power plant at An Nasiriyah. All Marine aircraft returned safely.

Beginning at dawn on 17 January, Marine Aircraft Group 13 (Forward) joined in with AV-8B Harriers and Rockwell OV-10 Broncos observation aircraft from King Abdul Aziz Naval Base near Jubayl to strike MarCent targets in southern Kuwait. The 3d Marine Aircraft Wing went on to fly 144 combat sorties that day over Iraq and Kuwait, the first of more than 18,000 it flew

---

*Marine aviation operations are more fully discussed in a forthcoming monograph by the author entitled "U.S. Marines in the Persian Gulf, 1990-1991: With the 3d Marine Aircraft Wing in Desert Shield and Desert Storm," to be published by the Marine Corps Historical Center in 1993.

A McDonnell Douglas F/A-18C Hornet of Marine Fighter Attack Squadron 212 and two Grumman A-6E Intruders of Marine Attack Squadron (All Weather) 533 wait at Shaikh Isa Air Base, Bahrain, in February 1991. All are part of Marine Aircraft Group 11. The ramp they are standing on was constructed by construction battalions ("Seabee's"), later designated the 3d Naval Construction Regiment, of the U.S. Pacific Fleet.

during the campaign. The pilots and aircrews of these two aircraft groups had the longest stretch of sustained combat of any Marines in the force; most of them flew daily over the next 43 days. General Moore, the wing commander, flew a dozen missions himself during the air campaign.

As noted, MarCent's aviation forces were under the command of Major General Royal Moore, Commanding General, 3d Marine Aircraft Wing. Under procedures ironed out in August 1990, the wing received taskings from two commanders. All missions outside of the MarCent area of operations were tasked by CentCom's designated Joint Forces Air Component Commander (JFACC), Lieutenant General Charles A. Horner, USAF, who was concurrently Commander, U.S. Air Forces Central Command. Missions flown by Marine aircraft in the MarCent area of operations, which included southeastern Kuwait, were tasked by General Boomer as commander of MarCent. Other forces that flew missions within the MarCent area of operations were tasked by JFACC but controlled by MarCent.

A daily air tasking order coordinated all in-theater missions except helicopters.* While JFACC common theater taskings were known 48 hours in advance, MarCent did not issue its fragmentary order until the night before in order to give the ground combat element commanders maximum flexibility. In practice, the wing's operations staff constructed the wing's own schedule using a set-aside for "JFACC sorties." The balance went to the force. Nearly all of the missions flown by Marines in theater support involved targets in southern

*The size of the Air Tasking Order was immense. The ATO for 17Jan91 ran to well over 700 pages. Unfortunately JFACC transmitted it with "Flash" precedence across normal military message circuits which blocked other traffic to the force for six hours. Colonel R. Glenn Hill, the MarCent/I MEF G-6 for communications and computers, neatly solved the problem by having subsequent ATOs sent via computer wide-area network.

Iraq and the Kuwait Theater of Operations. If General Boomer needed the JFACC sorties however, General Moore did not hesitate to use them or go into a "surge operation" to provide them.

As it developed, during the Phase I strategic air campaign, most of MarCent's offensive missions were flown in support of JFACC while the smaller fraction went to I MEF. The latter were mainly AV-8B Harrier sorties in southeast Kuwait. In Phases II and III, the ratios gradually reversed so that by the commencement of the ground assault on 24 February, "G-Day," nearly 100 percent of the wing's missions were in support of MarCent.

The three phases of the air campaign overlapped in execution and continued until the conclusion of the ground campaign 43 days later. As the first strikes were being flown, Iraq replied by launching a number of Scud ballistic missiles at area targets in Saudi Arabia and shortly at Israel as well. Marines were also on the receiving end of the large Frog rockets as well; three impacted on Mishab early on 17 January followed by 16 more the next night. They caused little damage but their spectacular detonations could be heard at Safaniyah 20 kilometers away. Although these weapons were rarely destructive, the Scuds had a certain terrorizing effect on civilians. To mitigate this threat, Central Command dedicated considerably more assets than planned for the prosecution

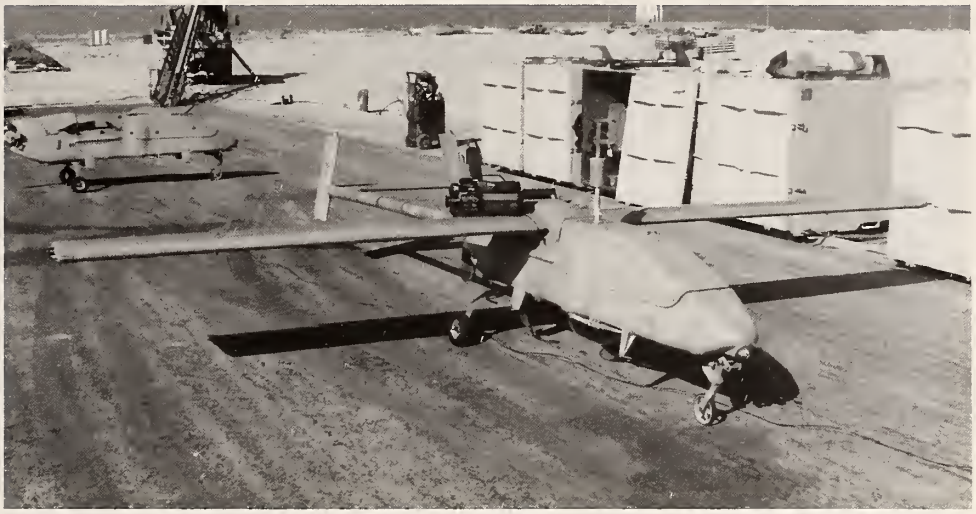
Scene of the death of a corps commander? This crater and ruins of a structure mark the impact of a laser-guided GBU-10 2,000-pound bomb delivered by a Grumman A-6E Intruder of Marine Aircraft Group 11 at about 1925 on the evening of 31 January 1991 during the Khafji actions. A flight of two night/all-weather attack Intruders were scrambled from Shaikh Isa Air Base, Bahrain, to attack a command and control site at a former Kuwaiti military base about 22 kilometers southeast of Al Ahmadi. The Kuwaiti Resistance had reported a high-level meeting was in progress there. Shortly after this, intelligence reports indicated the Iraqi III Corps commander had been killed in a bombing attack.

of Phase I in an effort to destroy Iraq's ballistic missile capability. This came mostly at the expense of Phase III, battlefield preparation, which was intended to "shape the battlefield" for ground operations. Although General Boomer understood the political necessity of hunting down and striking the Scud systems, he could not afford to let the battlefield shaping operation be compromised. Accordingly, as G-Day approached, he directed the 3d MAW to fly an increasing amount of offensive sorties against selected targets in southeastern Kuwait.

In the area of targeting, under the air tasking order system, Lieutenant General Horner as JFACC coordinated all missions in the Kuwait Theater of Operations. General Boomer's targeting cell selected targets to be struck in the MarCent sector and then arranged them on a priority basis. These primarily were enemy command and control nodes and indirect fire weapon systems such as artillery, multiple rocket launchers, and Frog surface-to-surface rockets in southeastern Kuwait. General Boomer believed these presented the greatest threats to the force in the assault. He directed that the order in which these targets were to be struck be varied so that the Iraqis would have difficulty in determining the likely penetration points and avenues of approach of Marine forces. As part of the overall theater air campaign, MarCent target nominations competed with others presented to JFACC. If MarCent targets were not attacked due to operational priorities of CentCom, General Boomer had the discretionary authority to task MarCent aircraft to attack MEF-designated targets and often did so.[33]

One significant example of this occurred during the Khafji actions on the evening of 31 January. The I MEF all-source fusion center for intelligence received a report from the Kuwaiti Resistance that a high-level meeting of Iraqi military officers was occurring at a former Kuwaiti military base about 11 kilometers south of Ash Shuaybah near the coast. The Resistance was able to identify the specific site, a small building in a park. The force relayed the information to the wing which launched two Marine all weather attack A-6E Intruders from Shaikh Isa Air Base to attack the site. The aircrews located the building in the dark with their forward-looking infrared sensors, designated it with laser guidance, and then struck the building at about 1925 with laser seeking GBU-10 2,000-pound bombs. Their attack apparently caused the death of the commander of the *Iraqi III Corps* who was Lieutenant General Boomer's opposite number.[34]

After the air campaign began, an important targeting issue from General Boomer's perspective was bomb damage assessment (BDA). Both force and wing intelligence officers found it difficult to ascertain actual results due to the scarcity of MarCent-controlled overhead imagery systems and usable aircraft sensor video recordings. Moreover, there was a lack of trained target analysts. As mentioned, the Marine Corps' last high-speed imagery platform, the McDonnell RF-4B Phantom photo and radar reconnaissance aircraft, had been decommissioned in August 1990. This placed the force at the mercy of national and other services' assets for good quality imagery. These agencies were themselves saturated with requests and generally were unable to get imagery



Marine Pioneer remotely piloted vehicles operated from Al Mishab Airfield in early February 1991. Overhead imagery of the I MEF's future operating area was scarce, and the Marines sorely missed their last organic manned photo-reconnaissance platform, the McDonnell-Douglas RF-4 Phantom II, which had been decommissioned in August 1990. All of the Marine Corps' RPV fleet was thus ordered into the theater and pressed to maximum use. Each of the tiny craft could carry a day or night sensor package.

products to the force in less than 72 hours. When it did arrive, the Marine intelligence analysts were disappointed in the quality; it seemed to them they were getting third- and fourth-generation copies.[35]

At first, the force's principal organic systems for BDA within southeastern Kuwait were Pioneer remotely piloted vehicles and Rockwell OV-10 Bronco observation aircraft. The former had real-time imaging although it was of grainy quality. The latter had forward-looking infrared for night observation but were vulnerable to visually fired surface-to-air heat-seeking missiles during daylight. This led to the first casualties of the war on 18 January when Lieutenant Colonel Clifford M. Acree, the commanding officer of Marine Observation Squadron 2, and his observer, Chief Warrant Officer-4 Guy L. Hunter, Jr., were brought down by a missile over southern Kuwait.*

Aerial reconnaissance assets that were available to the force were few. Therefore damage assessments were often delayed, which in turn stretched out the targeting process. Sometimes the delays resulted in targets being unnecessarily struck a second time. Later on, General Moore was able to help by short-circuiting the photo collection process. He informally attached photo imagery interpreters to the U.S. Air Force's 35th Tactical Fighter Wing, which included the Nevada Air National Guard's 192d Tactical Reconnaissance Squadron. This unit conducted reconnaissance over southern Kuwait and was

*LtCol Acree and CWO-4 Hunter ejected with minor injuries, were captured, and subsequently put on display in the Iraqi capital at Baghdad. They were repatriated after the conflict.

conveniently based at Shaikh Isa Air Base next to Marine Aircraft Group 11.* The Marine imagery interpreters selected and printed desired photographs. Then they delivered the prints to a waiting Marine Beechcraft C-12 Super King liaison aircraft which flew them to the force command post.

Other aerial intelligence assets arrived in-theater 13-15 January to fill the gap. To provide battlefield intelligence and fast-moving forward air controllers (FastFACs), Marine All Weather Fighter Attack Squadron 121 was snatched out of its initial operational workup at El Toro and ordered to Bahrain in its new two-seat F/A-18D Hornets. The squadron arrived just in time to render golden service during the air and ground campaigns. The force gained a signals intelligence platform known as Senior Warrior in the form of two specially configured Lockheed KC-130T Hercules refueler-transports of Marine Air Refueling/Transport Squadron 452, a Reserve unit from Newburgh, New York. A valuable theater asset in targeting was Grumman's prototype Joint Target Attack Radar System (JSTARS). This multi-mode, phased-array radar was carried aloft in a converted Boeing 707 transport and sensed vehicle movements over a wide area.

Double Breaches and Logistical Headaches

At the beginning of February, additional breaching equipment arrived in-theater following a remarkable acquisition effort by the Research, Development, and Acquisition Command at Quantico. At the same time the 2d Marine Division commander, Major General Keys, concluded that his division was sufficiently trained to engage in separate breaching operations. On 1 February Keys and his operations officer, Colonel Ronald G. Richard, approached General Boomer and argued for a second set of breaches, one per division. They felt that separate breaches offered certain advantages such as mutual support and the elimination of the complex passage of divisions with its correspondingly high concentration of attacking forces at the area of penetration. They also believed that double sets of breaches would make it harder for enemy commanders to assess what was happening on the battlefield and therefore to respond effectively with supporting arms. However, the concept required a major effort to reposition combat service support and to move 2d Marine Division into new tactical assembly areas. General Boomer weighed the issues including the minimal time available; he knew that the ground campaign could begin as soon as as 20 February. Boomer told Keys to develop the concept and then put the I MEF staff to work on it.

Although the two-breach course offered more tactical advantages, Colonel Raymond A. List, the force logistics officer was aghast at the requirements to support it. Not since the Korean War, if even then, had the Marine Corps faced such a difficult overland logistics challenge. To support both divisions,

---

*The commander of the 192d TRS was happy to oblige. LtCol Anthony H. Scheuller had served as a Marine fighter attack pilot in Vietnam.

Commanding general and principal staff of I Marine Expeditionary Force are photographed at the Safaniyah main command post on 13 February 1991, shortly before displacing to Al Khanjar. From left are: Col Raymond A. List (G-4 Logistics), Col Robert K. Redlin (G-1 Manpower/Personnel), Col Eric E. Hastings (Chief of Staff), LtGen Walter E. Boomer (CG I MEF), MajGen Richard D. Hearney (DCG I MEF), Col Billy C. Steed (G-3 Operations), Col Forest L. Lucy (G-2 Intelligence), and Col Robert G. "Glenn" Hill (G-6 Communications/ Electronics and Information Systems Management).

the Direct Support Command had to move its main combat service support area northwest from Kibrit along secure but as yet unimproved main supply routes. In addition, there were no airfields in the area for casualty evacuation or aerial resupply. Nonetheless, after discussions with his staff and subordinate commanders over the next five days, Boomer felt that these obstacles could be overcome in the time remaining. List calculated that 15 days of supplies would be needed to support the ground campaign.* He initially allocated these to three sites: seven days' worth would remain at Kibrit and two would be staged at the port of Mishab. The remainder plus 15 days of ammunition, the most difficult part, would have to be moved to a combat service support area known so far simply as "Alpha." Soon after List's planners realized how far this was from the ports, about 170 road kilometers from Mishab and about 355 kilometers from Jubayl, they raised the stock objectives at the new base in fuel, water, and ammunition to 15 days.

General Krulak at the Direct Support Command dispatched an engineering team under Colonel Gary S. McKissock to a remote part of the desert to the west and north of Kibrit to begin surveying sites. He also placed all of the command's earthmoving equipment on alert. As soon as General Boomer settled on the new breach plan about 1130 on 6 February, he gave Krulak the go-ahead to build the new combat service support area. Within minutes, the 7th and 8th

*In many areas of stock objectives, there was never unanimity of what actually constituted a "DOS" for this type of campaign. List and his staff spent a lot of time trying to get agreement among the commands. For example, the water requirement was reduced from 10 to about 4-1/2 gallons per person per day.

Part of the five-million-gallon bulk fuel farm in the southwest corner of the Direct Support Command's large combat service support base, 165 kilometers by dirt road west northwest of Al Mishab, photographed on 21 February 1991. The DSC built the vast base in seven days and it was enclosed by 42 kilometers of blastwall berm, a portion of which can be seen near the top of the photograph. The remote area had no place name so the DSC dubbed it "Al Khanjar," Arabic for a type of short sword.

Engineer Support Battalions (Reinforced) departed Kibrit westbound to begin construction of a huge support base located about 35 kilometers southwest of the corner of the heel of Kuwait. The battalions' many feats of construction over the next 14 days included 38 kilometers of blastwall berm which contained among other things the Marine Corps' largest-ever ammunition supply point, 151 cells in 768 acres, a five-million-gallon fuel farm, and a naval hospital with 14 operating rooms. The complex also included two 5,700-foot dirt airstrips capable of handling C-130 turboprop transports. The area was so remote from any settlement or feature that it had no name or designation on maps except "gravel plain."* General Krulak's staff dubbed the place "Al Khanjar," Arabic for a type of short sword, to the delight of Arab officers attached to the force. By 12 February Al Khanjar was providing combat service support to the divisions.

A few kilometers west of the base was Landing Zone Lonesome Dove, the new home for the helicopters of Marine Aircraft Group 26 and a forward command post for the wing. Because of the distance from 3d Marine Aircraft

*In fact, the gravel was quite fine, ranging from sand grains to pea-sized pebbles. They were too heavy or dense to be blown into dunes by the wind.

Aerial view was taken on 21 February 1991, of a portion of Marine Aircraft Group 26's Landing Zone "Lonesome Dove," located near the southwest corner of the Al Khanjar Combat Service Support Base. Sikorsky CH-53D Sea Stallion and Boeing-Vertol CH-46E Sea Knight helicopters occupy the aluminum matting hardstands.

Wing headquarters at Jubayl, Major General Moore sent his assistant wing commander, Brigadier General Granville R. "Granny" Amos, to Lonesome Dove to set up a helicopter Tactical Air Command Center.

The 1st Force Service Support Group stepped up an immense flow of material to Khanjar from its ports at Jubayl and Mishab. Shipping activity in the Commercial Port of Jubayl reached its high point the previous month in January 1991 when 88 vessels passed through the port followed by 51 in February.*

The overland "line haul" operation from the ports to combat service support areas became known as the "Baghdad Express" and it operated more than 10,000 round trips. With adoption of the double breach plan, General Brabham immediately began to build up Saudi Motors from the 450 civilian trucks on hand in early February to more than 1,400. Some trucks came from as far away as Qatar and the United Arab Emirates. These mainly hauled ammunition and the Baghdad Express moved 15 days' worth in a total of 3,755 runs in only 10 days. The roads took a terrible toll on Saudi Motors, however, and at one point more than 575 contract trucks were out of action. Most of them lay strewn along the Kibrit-Khanjar route.

At the other end of the reliability spectrum was the force's organic tactical motor transportation operation built around the workhorse logistical vehicle system (LVS) of the Direct Support Command's composite 8th Motor Transport Battalion. During the shift westwards and in the assault, the battalion logged

---

*By user and nationality they were: Jan91 (88 total); MarCent (33), British (33), ArCent (20), Polish (2). Feb91 (51 total); MarCent (24), NavCent (2), ArCent (4), British (1), Polish (4), and Canadian (1).

more than 1,000,000 miles, most of it on unpaved desert roads. The versatile LVSs could be configured in flatbed, low boy, tanker, and wrecker modules and the engines of their Mk 48 tractors were kept running continuously during this time. Despite conditions of alternating dust and mud, the LVS turned in a remarkable 93% serviceability rate.

As the ground campaign approached, it was increasingly difficult to persuade civilian drivers of the Baghdad Express to make the run to Khanjar. The more worldly British competed by offering cash bonuses. To keep the wheels turning, the Marines matched the money and also threw in gas masks and *kung fu* martial arts videos. A total of about 350 drivers, mostly Filipinos, stayed the course. Even these were not enough. General Brabham sent out a call for Marines who could drive, or thought they could drive, a civilian tractor trailer rig. These individuals eventually numbered 900 and included Brabham's own driver and even some Navy dental technicians. Each went through an *ad hoc* half-day driving course at Jubail which concentrated on clutching and gear shifting before going on their first run. (U.S. equipment had gone to automatic transmissions some years earlier.)

Fortunately the transportation of fuel was less trying for the Marines thanks to a superb effort by the U.S. Army 240th Quartermaster Battalion that CentCom had sent to help. Calling themselves the "Trucks from Hell," the unit made many more than 5,000 runs and hauled most of the fuel that went to Khanjar. Land transportation was not enough by itself, and U.S. Air Force and Marine C-130 Hercules transports flew 540 missions of high priority cargo such

Marine KC-130R Hercules of Marine Aerial Refueling Transport Squadron 352 delivers last-minute breaching equipment to "Al Khanjar International" on 23 February 1991. Marine combat engineers built two 5,700-foot-long airstrips in only a few days near the Direct Support Command's giant combat service support base. Most of the 540 aerial supply missions to Al Khanjar were flown by Air Force and Air National Guard C-130s. Almost all the Marine Hercules aircraft were employed in the aerial refueling of Marine jets during the campaign.

as breaching gear directly into "Khanjar International," the two dirt airstrips next to the support base. To overcome a scarcity of tank transporters, the Saudi military loaned a number of its double-winch, 60-ton heavy equipment transporters (HETs) to move some of 2d Marine Division's M1A1 tanks forward.

The SeaBees finished up major airfield expansions at Mishab and Tanajib in January after overcoming delays in some of its projects because of material shortages and sluggish delivery, especially at sites in the north. Central Command and host nation policies regarding acquisition of materials were slow and complicated and the limitations on the numbers of available line haul vehicles didn't help matters. Recently redesignated as the Third Naval Construction Regiment, with Captain Mike Johnson as its commander, SeaBee units moved west with the force to engage in the repair and maintenance of the Kibrit main supply route and to undertake parts of the construction effort at Khanjar including its airstrips. They also built an enemy prisoner of war camp at Kibrit to accommodate 40,000 personnel.

One logistical problem at Khanjar was water. Drinking water sustained life, but almost as importantly, it was the medium for decontaminating personnel and equipment from chemical attacks. The SeaBees began drilling a well at Khanjar, but an around-the-clock operation failed to yield water. Reverse osmosis water purification units (ROWPUs) at Mishab converted sea water from the Gulf to fresh water. These worked well despite the presence of blobs of oil from a large oil spill created by the Iraqis. The 170-kilometer one-way run from Mishab to Khanjar put an immense strain on the available water trucks, however. A lucky discovery on the gravel plain solved part of the problem. While Marine engineers were building a road northwest from Khanjar to the 2d Marine Division tactical assembly area, they came across a mysterious pipe and valve sticking out of the desert. It turned out to be a water well, or perhaps a failed oil well, and it yielded about 4,000 gallons per hour. General Krulak named it the "Miracle Well."

To bring medical support closer to the battlefield, one of the two fleet hospitals at Mishab displaced to Khanjar. Its 14 operating rooms made it the third largest surgical organization in the service. The unpleasant prospect of mass casualties from both conventional and chemical weapons was the major concern of the I MEF Surgeon, Captain Jerry R. Crim, USN. To maximize the number of medical caregivers, the dentists and technicians of the force's dental detachments under command of Captain Thomas Carlsen, USN, trained in triage procedures, anesthesiology, and intensive care of patients. To counter a threat of biological warfare, specifically, anthrax, Crim initiated preventive measures throughout the force. To mitigate the possible effects of nerve agents, all members of the force began taking tablets of pyridostigmine three times daily in mid-February.

On the spiritual side, the force's senior chaplain, Captain H. Thomas Hiers, welcomed I MEF's first female chaplain, Lieutenant Pamela E. Davis, USN, into theater on 12 December. She was followed in January by Lieutenant John Cutler, who may have been the first rabbi to minister in the kingdom in many

years. As ground combat neared, attendance at services rose correspondingly in Hiers' tent which a sign identified as "The Chapel of the Breach."

Ground Actions Before D-Day

During the air campaign, I MEF engaged in both offensive and defensive ground combat actions. The former included a series of night combined artillery and air raids along the Kuwait border. Battery F, 2d Battalion, 12th Marines, attached to 1st Battalion, 12th Marines, conducted the first such artillery raid with its M198 155-millimeter howitzers about 30 kilometers inland from the coast against Iraqi rocket positions at 0315 on 21 January. The raid provoked inaccurate return artillery fire from the Iraqis, as was the case in many of the other raids later on. Some of the eight principal Marine observation posts along the Berm were the objects of probing engagements as well as artillery and rocket attacks during the air campaign. These posts were also points of surrender for defecting Iraqi troops. By 1 February, I MEF had gathered 137 enemy prisoners of war, most of them taken at these forward observation posts. By 15 February, the force had taken another 101 Iraqis.[36]

The first major defensive combat actions commenced on the evening of 29 January when Iraqi armored/mechanized forces penetrated into Saudi Arabia in four locations along the heel of Kuwait. The easternmost of these occurred in the Joint Forces Command-East area in and about the coastal city of Al Khafji which lay 15 kilometers southeast of the main border crossing point. Two Iraqi armored/mechanized brigades crossed the lightly defended border. By 2315 they were in the city.* Two observation posts and a forward operating base manned by detachments from 1st Surveillance, Reconnaissance, and Intelligence Group under command of the SRIG executive officer, Lieutenant Colonel Richard M. Barry, were shelled and then isolated. The Marines were able to escape in the early hours of the 30th to a "safe house" inside the city of Al Khafji until the town was retaken by Saudi and Qatari units two days later. During the time that they remained hidden, the teams directed air strikes of Marine Harrier jets and Cobra helicopters plus other service aircraft onto Iraqi targets.

There were three attacks into the MarCent area of operations to the west of Al Khafji on the same night of 29-30 September. One was a company-sized diversion that came out of the Al Wafrah sector. The main attack was a brigade-sized force that attempted to cross the Berm near the southwest corner of the border about 80-90 kilometers west of Al Khafji. The general outpost (GOP) unit for I MEF at this time was 1st Marine Division's Task Force Shepherd, a reinforced battalion-sized force of light armored infantry commanded by Lieutenant Colonel Clifford O. Myers. After receiving initial reports of the Iraqi assault from Observation Post #4 at 1926, Company D of Shepherd

---

*These actions are generally known as the Battle of Khafji. In fact the main engagement involving Marines occurred about 80 kilometers west of the city of Al Khafji.

moved from its nearby screen line to evacuate the reconnaissance team in their light armored vehicles (LAVs) and then worked to disrupt the Iraqi attack. They operated agile and fast, up to 100 kph, LAVs in two main variants; one carried infantry and a 25 millimeter cannon, the other TOW anti-armor missiles.* In a confused night action that continued until after dawn, Shepherd in conjunction with Marine and U.S. Air Force fighter/attack aircraft defeated the Iraqi forces, some of which retreated back into Kuwait. The last action involved a smaller Iraqi force which took over Observation Post #6 located about 15 kilometers south of Al Manaqish, Kuwait. This most northern of the Marine OPs was then unoccupied. Marine Division LAVs and artillery assisted by air strikes drove them out in short order.**

Although the reasons for the Iraqi incursions were not clear to General Boomer and his staff, the MEF commander was pleased with the prompt and effective response of the Marine screening forces. Boomer also believed that the resolute retaking of Al Khafji on 1 February despite casualties of 15 killed-in-action and 28 wounded was a watershed event for the coalition allies. The courageous conduct of the Saudis and Qataris who captured 642 Iraqi troops during the action, eliminated any doubts about the fighting spirit of Arab units on I MEF's right flank.

The Khafji actions also tested the force's combat operations center (COC), the nerve center and focus of activity at the Safaniyah command post. The COC was a traditional set-up with large map boards of various scales, overlaid with clear plastic. The current situation was displayed by grease pencil lines and symbols. Facing the boards was an arena of field desks with representatives of the staff sections, major subordinate commands, and other component forces, all of whom were linked to the outside by "secure" voice telephone. A desk in the center was reserved for the commanding general or his deputy. In an adjacent space was the fire support coordination center (FSCC). The direct air support center was nearby in its own tactical vans. Toward the rear and to one side of the COC was a bank of hissing radio speakers and their attendant operators. The noise level during operations was high, which made normal conversation difficult at times. Except for a single word processor for the journal, there were few high technology devices in the COC, and indeed, there was little to distinguish it from a Marine amphibious corps COC of World War II for that matter. Despite the inelegance and relatively low level of technical sophistication, it worked.

---

*The BGM-71 TOW missile was a Tube launched, Optically tracked, Wire guided weapon weighing about 18 kilograms with a maximum range of 3,750 meters. Other LAV variants: 81mm mortar carrier, command/communication, logistics, and electronics warfare.

**For a more complete account of these actions, see LtCol Charles H. Cureton, USMCR, "U.S. Marines in the Persian Gulf, 1990-1991: With the 1st Marine Division in Desert Shield and Desert Storm," a companion monograph of this series in manuscript form and scheduled to be published by the Marine Corps History and Museums Division.

As discussed earlier, the philosophy of maneuver warfare left more discretion in the hands of subordinate commanders. Colonels Bill Steed and Chuck Lohman, plus a booming-voiced chain-smoking ground operations officer, Colonel Emil J. "Buck" Bedard, were the action officers during operations. Although each situation was tracked as carefully as possible, they took pains not to micro-manage situations. They did, however, take special care in coordinating and deconflicting actions, and efficiently supplying support where it was needed.

Unfortunately, during the Khafji actions there were three fratricide incidents that caused the deaths of 12 Marines in combat; i.e., all the Marine fatalities of the period. These events were of grave concern to General Boomer.

Fratricide

Beginning in late January, Marines of I MEF came under a series of air attacks by friendly forces. These were known variously as "fratricide," "Blue on Blue," or "friendly fire" incidents. The first of these occurred on 23 January when a flight of two U.S. Air Force A-10s strafed Marine reconnaissance vehicles south of the border after being cleared by JFACC's airborne command and control center to strike a small convoy in southern Kuwait. As a result, General Boomer ordered the fire support coordination line, south of which all air strikes had to be coordinated with I MEF's FSCC, to be moved five kilometers north. As a practical matter, that meant that all strikes below the line were to be under MarCent forward air controllers.

The most serious incident of the campaign came on the night of 29-30 January as Task Force Shepherd engaged Iraqi forces near the southwest corner of the heel of Kuwait. During the action, a U.S. Air Force Fairchild A-10A Thunderbolt II close-support jet under control of a ground-based Marine forward air controller, released an infrared Maverick missile that struck a Marine LAV-25 light armored vehicle, resulting in the deaths of seven Marines and the destruction of the vehicle. An investigation determined that the LAV was about 6,000 meters from the A-10 pilot's intended target. About an hour earlier near the same location, a Marine unit fired a TOW missile which struck a another Marine vehicle, killing four Marines.*

As a result of the A-10 incidents, the procedures for assigning JFACC air strikes by the airborne command and control center were informally changed for the rest of the campaign. Each ABCCC crew contained a Marine liaison officer who was also a qualified forward air controller. They were given control over four contiguous "kill boxes" bounded by Latitudes N28-30 to N29-30 and Longitudes E47-30 to E48-30. This area included the heel of Kuwait and

---

*The Marines killed in action during these two incidents were: LCpl Frank C. Allen, Cpl Stephen E. Bentzlin, Cpl Ismael Cotto, LCpl Thomas A. Jenkins, LCpl Michael E. Linderman, Jr., LCpl James H. Lumplins, Sgt Garett A. Mongrella, PFC Scott A. Schroeder, LCpl David T. Snyder, LCpl Dion J. Stephenson, and LCpl Daniel B. Walker.

Kuwait City, i.e., all of MarCent's future area of operations. Henceforth, as a general practice, only Marine aircraft would attack targets in the vicinity of Marine ground forces.

Notwithstanding this measure, on the night of 1-2 February, a Marine Grumman A-6E Intruder night/all-weather attack jet was cleared by a Marine controller on the ABCCC to attack moving targets that its crew had detected in southern Kuwait. The ABCCC was not equipped with radar to monitor the flight independently and the Intruder crew failed to check its position. They attacked a 1st Marine Division convoy south of the border with cluster munitions, killing one Marine* and seriously injuring two more.

As a result of these incidents, General Boomer became gravely concerned and formed what he termed a Tiger Team of six officers and one civilian scientist under Colonel Gene D. Hendrickson to analyze the issue and make recommendations. The team determined that the incidents arose from three problems: (1) a lack of situation awareness by commanders, aircrew, and controllers, (2) the lack of a battlefield system for identification of friend and foe (IFF), and (3) the lack of visually defined cues on the night battlefield by which pilots could orient themselves.

The Tiger Team made a number of recommendations that could be implemented in the near term. At the same time, General Schwarzkopf put forth proposals to mark vehicles distinctively with inverted "V" symbols, distinctive orange panels, chemical lights, and thermal tape. The team felt these measures would be of little value for air-ground identification, but might be of some use for ground-to-ground situations. The first two were implemented generally throughout the theater within days. In addition to the informal steps taken aboard the airborne command and control center noted above, the team's recommendations included:

- Increased use of the Hughes Position Locating and Reporting System (PLRS) so that commanders and controllers would have real-time depictions of the actual locations of their units. For manually plotted combat operations centers and other controlling agencies, i.e., virtually all those of I MEF except for air defense, it recommended more frequent plotting of friendly positions.

- Improved situational awareness at the direct air support center by importing the TADIL-A visual air display. However, this could not be done in the time available.

---

*LCpl Eliseo C. Felix.

- Implementation of fire support coordination lines that could take advantage of the accuracies of aircraft inertial navigation systems and the installation of a Tacan radio beacon near the border to provide pilots cross references to their positions.

- A general tightening up of the criteria to be met before delivering aerial ordnance near friendly troops including reporting in and out (RIO) procedures, the use of check points to force up pilot and controller situation awareness, and positive marking of targets.

- Implementation of vehicle markings, infrared and visible light strobes for vehicles, and installation of British Beta long-lasting night low-light marking systems. Markings were placed on all vehicles, and many were equipped with the strobes.

- Marking the night battlefield with artillery rounds filled with chemical light material so that pilots would have visual cues to mark locations on the ground. In a superb effort, the Edgewood Arsenal in Maryland developed, tested, transported, and fielded to I MEF 68 155mm rounds using chemical-type shells in less than two weeks.[37]

Force Deception and Reserve

The detachment of British forces in January reduced the I MEF maneuver elements to two large divisions without a reserve. As the 2d Marine Division moved west and north out of its positions below Al Wafrah to its assembly areas in mid-February, the Kibrit combat service support area and main supply route were exposed to enemy attack. To convince the Iraqis that the former 2d Marine Division positions were still occupied, I MEF deployed a tiny deception force that was the brainchild of the assistant commander of the 1st Marine Division, Brigadier General Thomas V. Draude. Task Force "Troy" covered a front of 29 kilometers and consisted of about 110 Reserve Marines, mostly from 3d Air and Naval Gunfire Liaison Company. These Marines engaged in a series of noisy combined arms raids against Iraqi positions in the Al Wafrah sector every day beginning 18 February. Their efforts paid off. Interrogations

of opposing Iraqi officers later indicated their belief that the Marine land attack would come from Troy's area.

Despite Task Force Troy's good efforts in tying up the Iraqi *5th Mechanized Division*, its tissue-thin screen could give no significant defense of the area south of Al Wafrah toward Kibrit. To beef up the defense and provide a force reserve, General Boomer requested that CentCom attach the ground combat element of NavCent's 5th Marine Expeditionary Brigade (5th MEB) commanded by Major General Peter J. Rowe. Both the 4th and 5th MEBs were part of General Schwarzkopf's strategic amphibious deception effort, however. Thus Regimental Landing Team 5, under command of Colonel Randolph A. Gangle, and its aviation combat element partner, Marine Aircraft Group 50 under Colonel Randall L. West, could not come ashore until G-Day itself.

The 5th MEB was the last large Marine Corps unit to arrive in the theater. It contained the highest percentage of Reserve units after the all-Reserve 24th Marines. Colonel Gangle's first concern was to successfully integrate his Reserve units, which was accomplished in a series of intense training exercises beginning at Twentynine Palms in November just prior to embarking on ships. As 5th MEB sailed westwards, it engaged in continuous wargaming at sea and then conducted exercises in the Philippines, Oman, and the United Arab Emirates. By the time the brigade reached its station in the northern Gulf, it was at a high state of readiness and Gangle could find no difference between regular and Reserve units. Shipping problems complicated the picture, however. The regimental landing team had to shift its command element and other units from USS *Tripoli* (LPH 10) on 18 January after that vessel struck a mine and was seriously damaged. After receiving relatively short notice of the 5th MEB's new mission, General Rowe discovered that his brigade's primary follow-on echelon vessels, MVs *Flickertail State* and *Cape Girardeau*, could not be unloaded at Al Mishab's small port. Instead they had to sail another 100 nautical miles southeast to Al Jubayl. The 1st FSSG, assisted by the brigade's own understrength Brigade Service Support Group 5, began offloading Regimental Landing Team 5's sustainment on 23 February, the day before G-Day.

Marines and Civilians

As offensive operations neared, the 3d Civil Affairs Group detachment was reinforced on 12 January by its own main body, many of whom had been sent home earlier in September, plus the 4th Civil Affairs Group. Redesignated 3d Civil Affairs Group (Rein), the unit's abilities were tested when Iraqi Scud missiles began to fall into the rear area at Jubayl after 17 January. (Ironically, Scud attacks never came near most of the main body of the force). The Scud and chemical weapon threat deeply affected both the Saudi and the expatriate communities, and the group spent much time meeting with local petrochemical plant executives and workers plus local citizens' and business groups. As part of its liaison operation, it maintained a presence at the Jubayl Saudi civil police

station and linked the rear area operations center (RAOC) with the Saudi emergency coordination center for civil defense. The group developed evacuation procedures for refinery personnel and coordinated the security arrangements for Marine units at the Aramco complexes at Safaniyah and Tanajib.

Another important activity of 3d CAG in support of military operations was its role in the Kuwaiti Augmentation Program. The acute shortage of Arabic linguists within the force led to a program to integrate Kuwaitis into Marine ground units. These exiled Kuwaiti volunteers, mostly military and police officers plus some students of whom the most senior was Colonel Fahad al Qahtani, KAF, provided translator services, advice on geography and terrain, and assisted in enemy prisoner of war (EPW) handling. Group personnel also completed a comprehensive civilian resources survey that encompassed each neighborhood of Kuwait City. All of this marked a shift in CAG activities. Previously, operations were directed primarily at issues within Saudi Arabia. Civil affairs personnel began shifting into the divisions and brigades afloat as well as into psychological operations teams as G-Day approached.

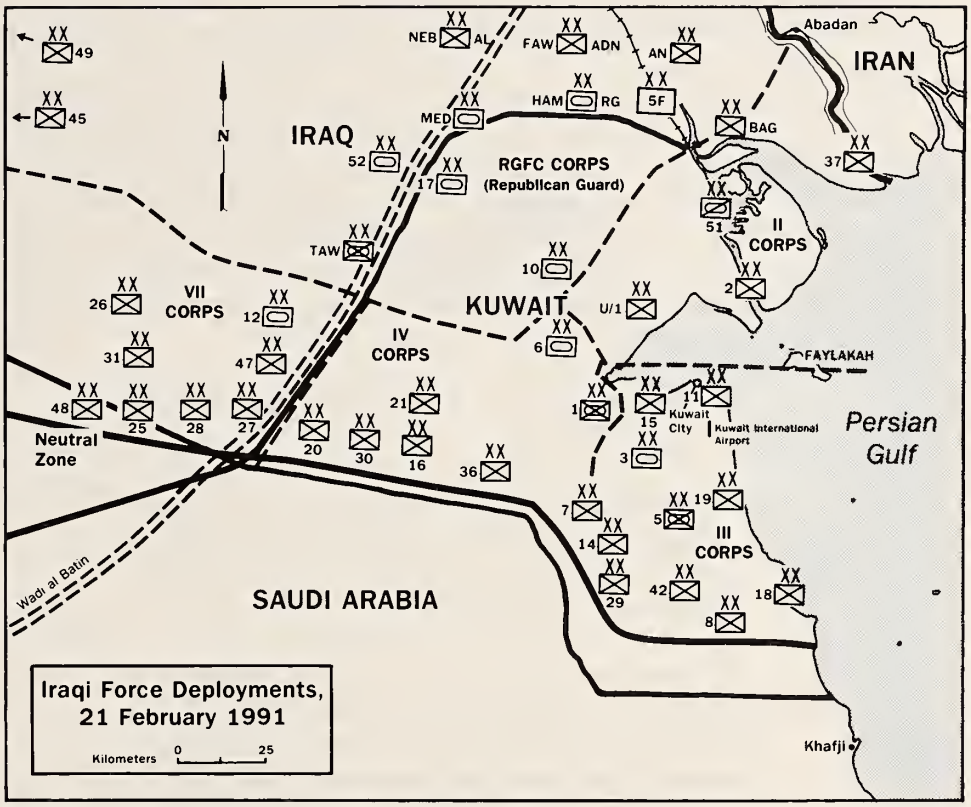
Coalition Forces on the Left and Right Flanks

After the commencement of hostilities, the most significant relationships with Coalition Forces were in the areas of reconnaissance and supporting arms coordination. Force Reconnaissance teams accompanied command and forward elements of the Joint Forces Command-East on MarCent's right flank. This command included elements of Saudi, Qatari, Omani, and United Arab Emirate forces. Accompanying them were 1st ANGLICO supporting arms liaison and fire control teams to control Marine and other service air strikes and naval gunfire in support of JFC-E during the ground campaign. On the left flank, MarCent liaison teams were also attached to the Joint Forces Command-North/Northern Area Command comprised mainly of Egyptian and Syrian forces.

The teams with JFC-E were responsible for reporting movements of their Coalition units to I MEF for purposes of coordination. Reconnaissance teams were also to secure the American Embassy in Kuwait City if the opportunity arose. Additionally, some teams performed pathfinding operations on behalf of their JFC-E units. As noted earlier, some JFC-E units were unpracticed in combined operations and relied heavily on MarCent teams with their integrated communications nets to help coordinate their movements and operations.

Deception Operations

The I MEF deception effort was integral with that of CinCCent's. General Schwarzkopf ordered coordinated "surge" theater deception operations on 20-21 February, i.e., the Wednesday and Thursday before the Islamic weekend, to desensitize enemy decision makers. His intention was to deceive Iraqi



Members of the combat art team traveled widely to visit Marine units on the Saudi Arabia-Kuwait-Iraq frontiers. Still figures of Marines facing an unseen enemy made compelling subjects. Col H. Avery Chenoweth used watercolor to record "Sentry Post, I MEF Compound, Desert Storm, 18 Jan 91."

commanders into believing that the main effort would come into Kuwait only and that the supporting attacks would come through western Kuwait and from an amphibious assault.

In concert with General Schwarzkopf's plan, General Boomer's deception objectives included causing the enemy to concentrate assets to prevent a breach in the vicinity of the III/IV Corps boundary near the bend of the border at Al Manaqish, convincing the enemy of I MEF's preoccupation with the defense of Saudi oil fields and its own lines of communication, and finally, to simply overload the enemy with excessive bogus and misleading inputs. Based upon Iraqi dispositions and conduct on G-Day and beyond, the deception program appeared to be successful. Specific measures included:

- The formation of the deception task force, Troy, noted earlier.

- An electronic ruse to perpetuate the radio emission signature of the I MEF command post after it had displaced to the vicinity of Al Khanjar on 15 February.

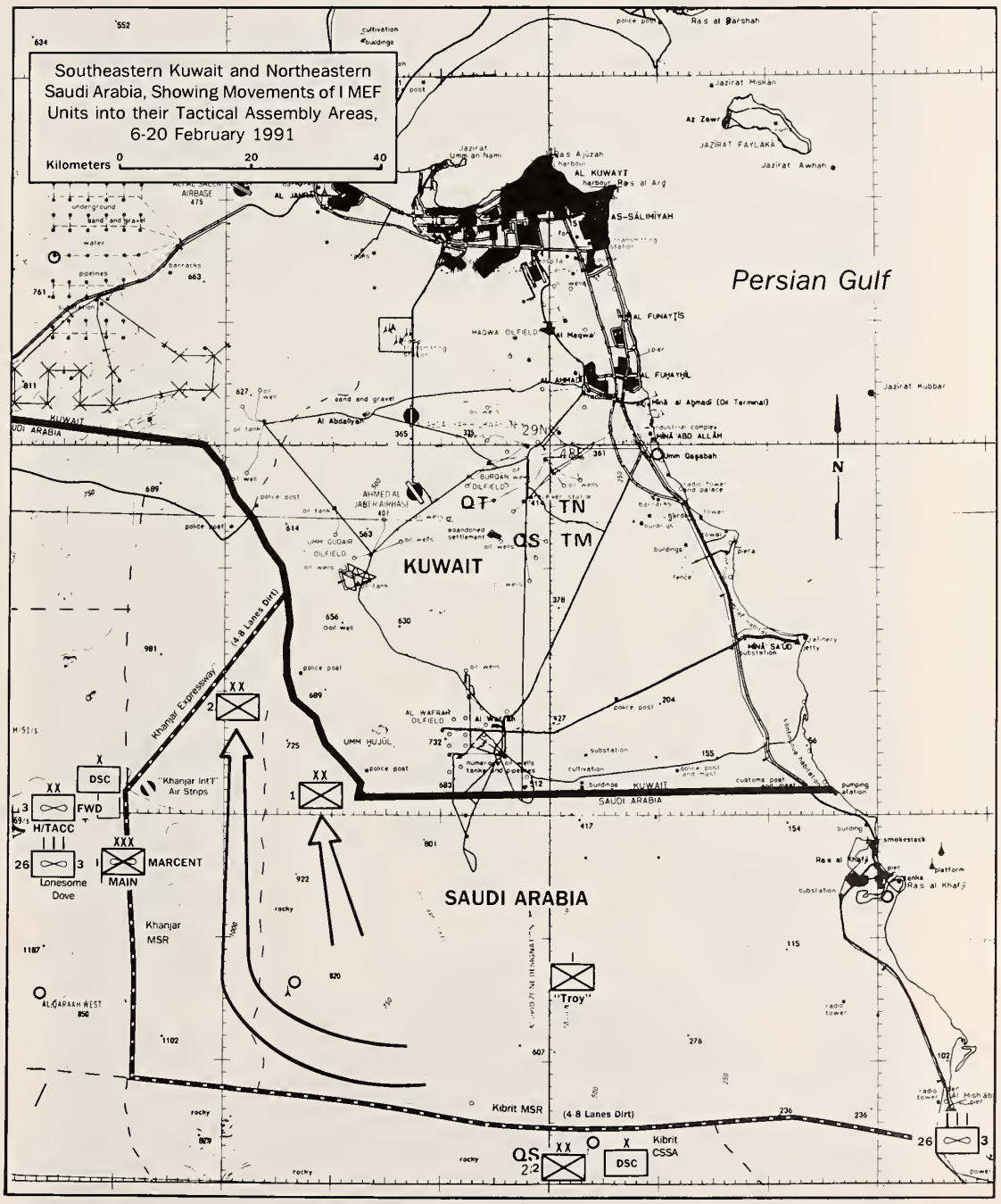
- The employment of General Boomer's command vehicles with a two-star impostor at the border near Manaqish on January 16th. In addition there were other operations nearby such as artillery raids, leaflet drops, berm cuts, and the like on a continuing basis to demonstrate intent to penetrate in that vicinity.

- The use of mock artillery pieces and tanks west of Al Qaraah near a fake combat service support area beginning 17 January to mask ArCent and MarCent movements.

- Special Operations Command reconnaissances and other actions along the coast of Kuwait to promote a belief that amphibious operations would be undertaken between Mina Saud and Ras Al Qulayah.

I MEF Moves Forward

On 14-15 February, General Boomer relocated his command post about 180 kilometers west northwest over dusty roads from Safaniyah. He originally intended to relocate near Kibrit, but after the adoption of the second breach, the force's senior communicator, Colonel "Glenn" Hill, realized that Kibrit


Southeastern Kuwait and Northeastern Saudi Arabia, Showing Movements of I MEF Units into their Tactical Assembly Areas, 6-20 February 1991
Kilometers 0 20 40
Persian Gulf
KUWAIT
SAUDI ARABIA
AL KUWAYT
AS-SĀLIMĪYAH
AL FUNAYTĪS
AL FUḤAYḤĪL
Jazirat Kubbar
Jazirat Awhah
Jazirat Farlaka
Az Zawr
Ra's al Barshah
Ra's Ajuzah
Ra's al Arḍ
Khanjar Expressway (4-8 Lanes Dirt)
Khanjar MSR
Kibrit MSR (4-8 Lanes Dirt)
Kibrit CSSA
Lonesome Dove
MARCENT MAIN
"Khanjar Int'l" Air Strips
H/TACC
DSC
FWD
"Troy"
Ra's al Khafji
Mina Saud
Mina Abd Allah
Umm Gegebah
Umm Gudair Oilfield
Ahmadi Oilfield
Burgan Oilfield
Al Wafrah Oilfield
Maqwa Oilfield
Umm Hujul
Al Abdaliyah
Ahmed al Jabir Airbase
N
29N
48E
QT
TN
QS
TM

wouldn't do. Hill, who by now had almost gotten used to the constant juggling of his assets, informed Boomer that in order to have adequate communications with both divisions, he would have to move his command post somewhere near Al Khanjar. At a site eight kilometers south of the Al Khanjar combat service support area, the I MEF Headquarters Company under command of Major Gary R. Ing established an austere tent camp inside a series of concentric berms. It was set within a slight undulation of desert with the effect that the camp was practically invisible two kilometers away. The rains earlier had brought forth a fuzzy carpet of thin grass and the trafficability of the desert in this area was excellent. The nights were bitter, however, with temperatures often below freezing.

At a formation on 15 February, Boomer thanked the officers and troops of his command element for pulling off a "minor miracle" in the latest move and for all their hard work in the past. Most of them had been with Boomer for

LtGen Boomer addresses the I MEF command element on 15 February 1991 at the force's new main command post located eight kilometers south of Al Khanjar.

Aerial view photographed looking east on 21 February 1991, of the I MEF main command post located about eight kilometers south of the Al Khanjar Combat Service Support Base. Concentric design of blastwall berms was for ease of defense by the command element's small security force. The site was located within a slight undulation of the terrain and could not be seen on foot beyond about two kilometers. The CP's radio antennas were remoted away from the site.

nearly six months now and chances for gatherings like this were rare. He then informed them that the "next stop is Kuwait" and that "We're going to go fast and go violently" which brought forth a loud roar of approval.[38]

The combat operations center at Al Khanjar was established in a large quonset style tent. Due to its high noise level, General Boomer was persuaded by his staff to establish a command center adjacent to the COC which would be a quiet area for himself, General Hearney, and his senior operations staff to discuss matters. Alongside a few maps, a computer was set up on a plywood table whose monitor displayed a map with the decoded symbols of position locating and reporting system-equipped units. This had come about as a result of a recommendation of the Tiger Team's antifratricide report. The team discovered that PLRS was being used more as a navigation device than as a command and control tool. Within a week of the team's report, the manufacturer's PLRS expert, a retired Marine major by the name of John P. O'Connor, had arrived and tapped into both divisions' PLRS networks. For the first time in combat, a Marine force commander would be able to track in real time the progress of his units on the battlefield.*

---

*O'Connor had intended to use a spare Master Station display unit which could display up to 999 stations simultaneously to depict both divisions' situations. However, there wasn't enough time. Instead, he used a receiver repeater unit attached to a computer to display 64 selected units of each division, one division at a time. The MEF continued to receive the division's PLRS networks until the final day of the ground campaign when they ran out of range.

Manpower Issues

The number of Marines and attached personnel of the force had grown from 50,395 as of 1 January to 72,233 on 17 January (D-Day), then to 79,751 on 24 February (G-Day), finally rising to a peak strength of 84,515 persons with the subsequent movement of Regimental Landing Team 5 ashore. As the major subordinate commands moved into their tactical assembly areas, manning shortfalls in tank and amphibious assault vehicle specialties cropped up. The Combat Replacement Regiment was able to provide these specialists who were then attached to combat engineer units. Some engineers also cross-trained to act as crewmen.

The integration of Marine Reservists into the force went very well. Apart from Colonel Germann's 24th Marines, most Reservists deployed as battalions, squadrons, and companies, or as reinforcement detachments. A smaller number were Individual Ready Reservists. As noted, the response rate to the callup was nearly 99 percent and reflected a high level of morale. The state of their readiness also was quite high, especially at the small unit level. A number of units achieved outstanding successes in combat. On the eve of G-Day, 11,703 Marine Reservists were in I MEF out of more than 31,000 called up.

There also were also 1,335 female Marines in I MEF, including 10 who were forward with the MEF command post. Most women Marines served with aviation or combat service support organizations. Operation Desert Storm witnessed the greatest participation ever of women Marines in a combat operation. Apart from a lack of privacy at times, the presence of female Marines was not an issue within the force itself.

The Combat Replacement Regiment under Colonel Jack A. Davis, a Reserve law enforcement official from North Carolina, was set up on 22 January in response to the CNA casualty analysis that indicated that the force could suffer as many as 10,552 casualties in the first week of a ground war. Headquarters Marine Corps identified replacements in critical specialties and formed them into companies for further training. The first 10 of a planned 20 companies, about 2,500 Marines, were flown in with full personal equipment and based at a camp near Jubayl.

Another concern of commanders at all levels was tracking the location and status of each member of their units who was hospitalized. The force established MarCent hospital liaison teams in all hospitals in Southwest Asia, at military hospitals in Europe, and in the United States. On 10 February, Casual Company was added to the Combat Replacement Regiment. Previously, if an outpatient was not fit for duty within seven days of release from the hospital, he was evacuated to the United States until fully recovered. Very few, if any, such evacuees returned to their original units. The creation of Casual Company allowed I MEF greater ability to retain its in-theater manpower assets. Marines were only sent to the company if they were expected to be fit for unrestricted duty within 14 days.

Finally, on 11 February, procedures for next of kin notification were clarified. For example, Camp Pendleton assigned to teams of five Marines each to the base adjutant. These teams formed the base casualty coordination center. If the rear element of a deployed unit received a casualty report, the procedure was to notify the center which in turn would inform the Marine's next of kin. Many of the casualty assistance officers in the U.S. were retired Reserve officers recalled to active duty.

American forces were the object of intense interest by the media. The force public affairs officer, Colonel John M. Shotwell, received requests from hundreds of media representatives to visit Marine units. Only a fraction of thee could be accommodated during the campaign itself, so the public affairs section established "press pools" to provide coverage as done elsewhere in the theater. Pool members got to experience the spartan existence of Marines in the field. General Boomer personally set a high priority on making himself and members of the force accessible to the pools, and he spent many occasions with them in candid interviews. Because deception was absolutely vital to the success of the campaign, CentCom policy circumscribed reporters in certain areas of their coverage such as location, size, and identification of units. Although this chafed some pool members, cooperation overall was excellent. There was one exception that caused great concern. After being denied permission to travel to the Kuwait border due to the hazards involved, a CBS television crew drove themselves unescorted to a Saudi-controlled border area west of Al Khafji in January. They strayed out of friendly territory, and Iraqi troops subsequently apprehended and incarcerated them until after the conflict was over. Besides ministering to its media charges, the I MEF Public Affairs Office had its own enterprise as well, a newssheet entitled *Brown Side Out* that was published for the Marines of I MEF. It went to tabloid format on 9 January. The office also produced 80 external news releases in January and February at the height of the campaign.

The Eve of G-Day

General Schwarzkopf directed the execution of ground offensive operations, Phase IV of Operation Desert Storm, to commence at 0400 local time on 24 February. Central Command forces in coordination with Coalition Forces were ordered to neutralize the Iraqi national command authority, eject Iraqi armed forces from Kuwait, destroy the Republican Guard, destroy Iraq's ballistic missile, nuclear, biological, and chemical warfare capabilities, and to assist in the restoration of the legitimate government of Kuwait. Some of these tasks were part of the air campaign already underway.

The MarCent mission was to conduct a supporting attack to penetrate Iraqi defenses, destroy Iraqi forces in its zone of action, and secure key objectives to prevent reinforcement of Iraqi forces facing the Joint Forces Command-North/Northern Area Command. Once this was achieved, I MEF was to establish blocking positions to halt the northerly retreat of Iraqi forces from

southeastern Kuwait and Kuwait City and to assist passage of Coalition Forces into Kuwait City. The force was to be prepared to assist in securing and defending Kuwait City as well as securing the U.S. Embassy. Additional tasks were the conduct of deception operations, the collection and control of enemy prisoners of war, the protection and direction of refugees and displaced civilians, and coordination with other commanders. MarCent executed its ground campaign in three stages. These deviated very little from the final version of MarCent Operation Plan Desert Storm.

In the plan, General Boomer stated his intent. This was to penetrate the Iraqi forward defenses with two divisions between the Al Wafrah and Al Manaqish oil fields. He also intended to deceive the enemy as to the location of his main effort. Marine air assets were to be massed or "surged" to suppress enemy indirect fire weapons that covered the area of penetration. As part of the theater deception plan, NavCent was to conduct amphibious deception operations in the form of a feint or demonstration to fix enemy forces north and east of the Burqan Oilfield. Central Command and MarCent airpower was to attack Iraqi forces that might blunt the penetration north of a line running through Al Ahmadi (Latitude 29-05 North). Iraqi mobile forces were to be destroyed in-zone while by-passing forces east of the Burqan oil field. Al Jaber Airfield was to be seized if it interfered with a fast advance which was focused on enemy forces, rather than terrain. Rapid integration of I MEF supporting arms was to speed the advance, although care was to be taken not to outrun logistics support and supply lines. Finally, although Coalition Forces were to capture Kuwait City, I MEF forces were to be prepared to conduct operations in urban terrain.

General Boomer crafted his concept of operations in coordination with the Combined Operation Plan Desert Storm. The Marine plan incorporated the same four phases as General Schwarzkopf's. The first three Phases were tied to the air campaign noted earlier: the strategic air offensive, the suppression of air defenses in the Kuwait Theater, and battlefield preparation. Phase IV was a three-stage ground offensive with MarCent conducting a CentCom supporting attack. Its aim was to fix and destroy Iraqi forces in zone, prevent reinforcement of Iraqi forces facing the Joint Forces Command-North/Northern Area Command on MarCent's left flank, and to preclude retreat of Iraqi forces from southeastern Kuwait. The final MarCent plan also had three stages: penetration, exploitation, and consolidation. Lieutenant General Boomer approved the last changes to Operation Order Desert Storm on 14 February 1991. The force executed this plan on G-Day, 24 February 1991. In order that every commander in the force would understood the plan clearly, Colonel Steed dispatched briefing teams under Colonel Chuck Lohman to every sector of the MarCent area of operations the week before G-Day.

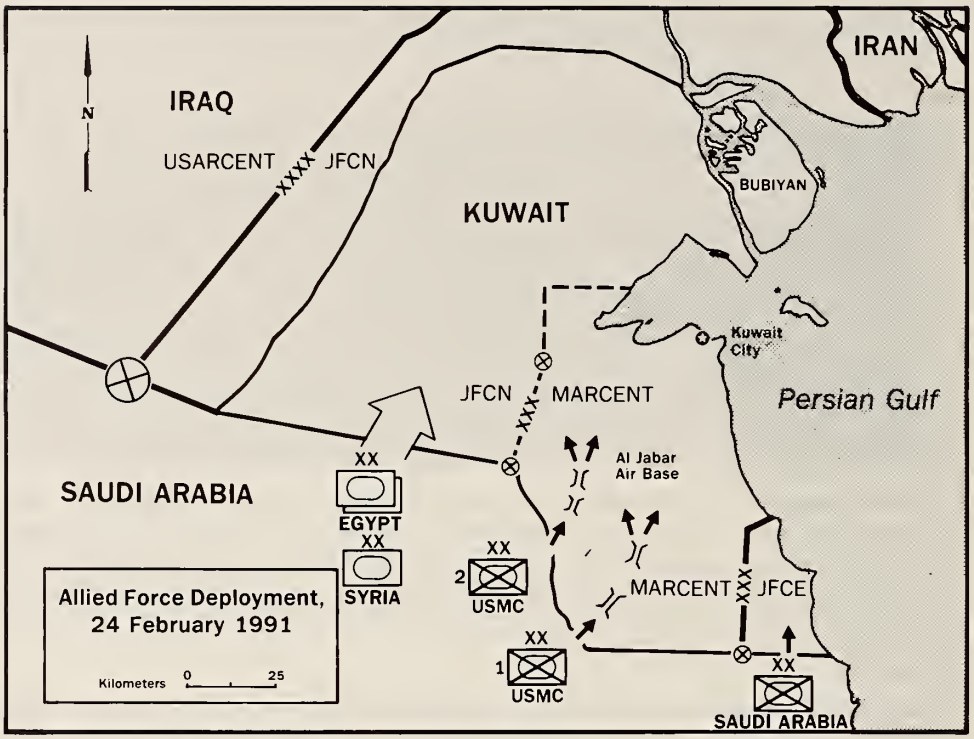
As G-Day approached and the forces of I MEF moved into their tactical assembly areas, the 3d Naval Construction Regiment opened gaps through the Berm. To preserve deception, they also made cuts in the Berm at the bend of the border near Al Manaqish. Combat engineers of the Direct Support Command constructed roads up to the Berm on the night of 23 February. The

At the entrance to one of the 2d Marine Division's six outer breaches a blue banner with the numeral "3" indicates that it is Lane Blue 3. The route leading up to it was marked successively with blue plastic garbage pails with "3s" spray-painted by Marine pathfinders who navigated by use of very accurate satellite-referenced global positioning system receivers. The blue pail just below the left banner is marked "PL" for phase line. Small red flags stuck in the edges of the breach lane indicate unexploded mines.

one that ran from the combat service support area forward to the 2d Marine Division was nicknamed the "Khanjar Expressway" and became the force's main supply route. The previous day, 22 February, a force of 2d Marine Division light armored vehicles was operating up near the Manaqish bend in the border as part of the deception effort, when it was engaged by a sizable Iraqi armored/mechanized force. The Marines were so effective in the ensuing action that Baghdad Radio reported that the ground war had already started. Boomer's remark to his staff that night was: "That was just my 2d LAI. Wait until he sees the rest . . . ."[39]

The Liberation of Kuwait: The Breach

At about 0400 on 24 February 1991, the 1st Marine Division began its penetration of the twin obstacle belts between the Umm Gudair (South) and Al Wafrah oilfields as the I MEF supporting attack. Major General Myatt employed two infantry regiment task forces to infiltrate the obstacle belts by foot between the Iraqi *29th* and *42d Infantry Divisions*: Grizzly, commanded by Colonel Jim Fulks, and Taro, under Colonel John H. Admire. Grizzly had actually moved about 20 kilometers into the no man's land between the Saudi Berm and the first belt beginning on 21 February. This action constituted the first retaking of Kuwaiti territory by the allied forces. Task Forces Grizzly and Taro secured the flanks for the main attack by 1st Marine Division's two mechanized units, Task Force Ripper, under command of Colonel Carlton W. Fulford Jr., and Task Force Papa Bear, under Colonel Richard W. Hodory. Four of the five battalions of the division's artillery regiment, the 11th Marines,



Among benefits of the art team's portrayals of Marines in Desert Storm is an accurate record of how uniforms and protective gear were worn and used. Col Chenoweth looked variously at the personality of a "Marine Gunner," his characteristic dress, and the hellish setting of burning oil wells.

comanded by Colonel Patrick G. Howard, had moved up to positions about four kilometers south of the first breach to provide support by 2200 the previous night. The division encountered light resistance during the breach, mostly in the form of artillery fire and a few tanks.

Despite a CentCom forecast* for 72 hours of relatively clear weather, light, and at times moderate, rain began falling about 0300, as indeed it would every day of the ground campaign. The rain was accompanied by reduced visibility, low cloud ceilings of 2,000-4,000 feet, and wind from the southeast. The wind fortuitously blew dense smoke from the burning Wafrah and Burqan oilfields across the force's avenues of approach, partially masking the movement of the 2d Marine Division attackers. Masking of an electronic variety came from the Grumman EA-6B Prowler jets of Marine Attack/Electronic Warfare Squadron 2. The Prowlers' electronic countermeasures officers jammed Iraqi RASIT battlefield surveillance radars just as effectively as they had done earlier to Iraqi air defense radar and missiles in the air campaign. Joining them in the arcane electronic arena was the ground-based 1st Radio Battalion. Sadly, the electronic battlefield also witnessed a fratricide incident: at about 1900 on 23 February, an AGM-88 high-speed antiradiation missile launched from an aircraft struck

Members of 2d Marine Division's Breach Control Party are led by LtCol Howard P. Shores II, second from right in woodland anti-chemical suit, who selected the breach points and helped implement the division's assault, modeled upon an amphibious landing.

---

*LtGen Boomer's own forecasters disagreed with CentCom's but were outvoted. The I MEF weather specialists observed a weak mid-latitude front from the North Atlantic picking up moisture from the sub-tropical jet-stream and correctly predicted it would intersect another weak cold front then crossing Turkey. The ensuing cyclogenesis or "pseudo-occlusion" over the northern Gulf produced the characteristic rain and wind conditions of the ground campaign. (Source: CWO3 A. R. Davis).

A Direct Support Command armored D-7 Caterpillar was disabled by a mine while attempting to widen Lane Blue 3 of the 2d Marine Division's breach. The division's greatest equipment losses occurred during the breaching operation and included seven M60 and one M1A1 tanks equipped with track-width mine plows, plus three assault amphibious vehicles.

AN/TPQ-36 counterbattery radar of the 11th Marines, killing one Marine and wounding another.*

At 0530, 2d Marine Division, reinforced by the U.S. Army Tiger Brigade, commenced the I MEF main attack, penetrating between the Umm Gudair (South) and Al Manaqish oilfields about 25 kilometers northwest of the 1st Marine Division assault. The 6th Marines, under command of Colonel Lawrence H. Livingston, conducted the division's breaching assault which punched through the middle of the Iraqi *14th Infantry Division*. Later its flanking units, Tiger Brigade and 8th Marines, penetrated seams between the *7th* and *14th Infantry Divisions* and the *14th* and *29th Divisions* respectively. During the night, most of the 10th Marines under command of Colonel Leslie M. Palm, crossed the Berm and set up their M198 howitzers on both sides of the routes to the first obstacle belt to support breaching operations. Reinforcing the division's artillery were 10 M270 Multiple Launch Rocket Systems from Tiger Brigade.

The division's breaching plan was elegantly simple, a factor that helped overcome the lack of time for planning and training. Major General Keys and his staff used an amphibious assault as a model, even though this particular assault was going to be conducted on land. Combat engineers laid out six lanes

*The Marine was Sgt A. A. Pack of 1st MarDiv.

A T54B/T55 series tank is located just inside the inner barrier, about five kilometers west of Al Jaber Air Base. Older tanks such as these were dug in as part of the primary Iraqi defenses. Many did not sortie out during the assault and were struck in their holes by various Marine weapons. The crew of this one only managed to fire its machine gun before being overrun and captured mid-morning on 24 February 1991. Newer T62 and T72 tanks were part of the Iraqi operational reserve which conducted counterattacks the next morning.

from six departure/penetration points that went through the Berm along a 12 kilometer front. These were named like beaches: from left to right ran Red 1, Red 2, Blue 3, Blue 4, Green 5, and Green 6. The 1st Marine Division's liaison officer, Lieutenant Colonel Howard P. Shores II, who was familiar with the terrain and the obstacles, suggested the location of breaches. Each lane was marked about every kilometer by appropriately colored plastic garbage pails, spray-painted with lane numbers and phase lines. The lanes converged down to a four-kilometer front at the first obstacle belt, and then continued in parallel until past the second belt.

As the divisions approached the obstacle belts, the flat, thinly grassed desert gave way to slightly undulating sandy terrain interspersed with small, low-lying salt flats (*sabkha*'s) that had become difficult with the rains but were trafficable. Although oil-filled trenches were burning in the area, the divisions had picked their breach points well; none of them obstructed the force. At the obstacle belts, combat engineers launched single and triple-shot line charges across the belts that created more or less continuous V-shaped trenches about a meter deep. Into these cuts went combat engineers and tank crews in M60A1 tanks configured with track-width mine plows and mine rakes. Despite casualties to the equipment, the Marines were able to open up 5-1/2 meter-wide lanes to permit waiting armor and mechanized forces to pour through.

There were many examples of courage and innovation during breaching. About a third of the line charges failed to detonate. When this happened, tank plow crews pressed on anyway. At some locations Marines went on foot into

the minefields and set detonators to explode the line charges that failed to go off. Others retrieved unexploded mines by hand and carried them out of the way. Infiltrating task forces at 1st Marine Division proofed their passages by manually probing and disarming mines they located. When the penetration in the 2d Marine Division's Green Lanes bogged down due to breaching equipment casualties, some units made short connector lanes over to other lanes to permit faster passage. To improve traffic flows after the penetrations, Direct Support Command engineers used armored D7 Caterpillar tractors equipped with plows and flails to widen the lanes.

After emerging from the second barrier belt, 2d Marine Division fanned out northwest of Al Jaber Air Base. The 6th Marines remained in the center to protect the breaches. Tiger Brigade passed through the breaches next during the afternoon of 24 February. It anchored the force's left flank by enveloping the Iraqi *7th Infantry Division*. During the night, the 8th Marines, under command of Colonel Larry S. Schmidt, came through the breaches to become the division's right flank. They rolled along the seam dividing the Iraqi *14th* and *29th Infantry Divisions*. The 2d Marine Division received continuous light opposition, mostly from artillery and tanks during its assault. The division suffered two killed in action that day, a Marine and a soldier from Tiger Brigade. Shelling by Iraqi artillery was intermittent, but the barrages were

Results of a Marine air attack with Mk 20 Rockeye cluster bomb munitions are evident on an Iraqi D20 152mm artillery emplacement. This was one of a brigade of 56 howitzers, located in and about the "Emir's Farm." The Iraqi ammunition bunkers were covered only with corrugated sheet metal and a thin layer of sand and were easy targets for Marine Hornet and Harrier jets. Rapid response air strikes and counterbattery fire effectively thwarted the large amount of Iraqi artillery during and after the breaching assault.

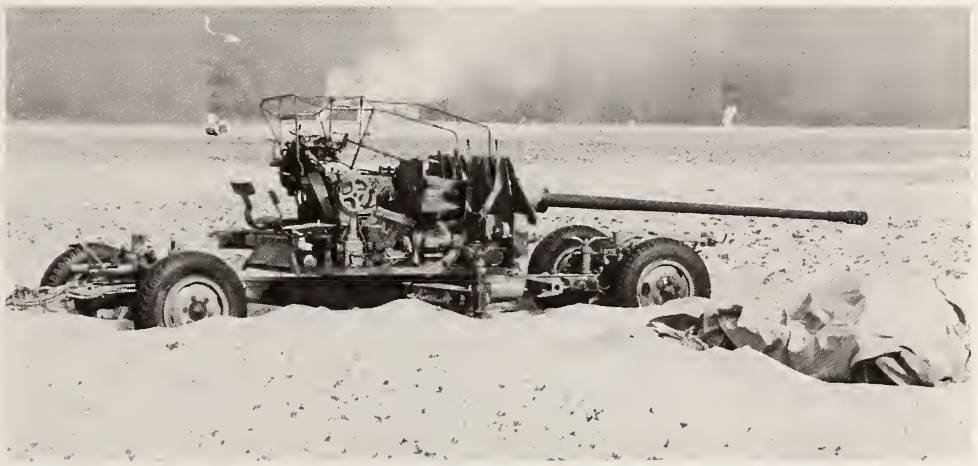
of defense did not sortie from their emplacements and became easy prey for supporting Marine aircraft.

Farther north near Kuwait City, U.S. Air Force A-10 Thunderbolt II and F-16 General Dynamics Falcon jets attacked tanks and armored vehicles under the control of Marine and Air Force officers in an airborne command and control center installed on board a U.S. Air Force Lockheed EC-130 Hercules transport. As I MEF advanced in the attack, planned high density air control zones were successively activated so that all air strikes in the vicinity of Marines came under positive control of the Marine Corps air command and control system. The 3d Marine Aircraft Wing flew 671 sorties in a surge effort during the first 24 hours of the attack, fixed wing aircraft averaging 2.36 sorties each.

Accompanying each battalion in the assault were teams from 2d and 3d Low Altitude Air Defense Battalions equipped with Stinger heat-seeking missiles. Near the border, 2d and 3d Light Anti-Aircraft Missile Battalions provided medium range air defense with radar-guided Improved Hawk missiles. Both organizations were part of Marine Air Control Group 38, commanded by Colonel Joseph Dellacourt. Rounding out the Marine air defenses were the F/A-18 Hornets of Marine Aircraft Group 11. Even though virtually all the Hornets were now flying attack missions in support of I MEF, each was armed with Sidewinder and Sparrow missiles that could be instantly brought to bear against intruding aircraft. Providing a radar umbrella over the force were the TPS-32 and TPS-59 radars from Marine air control squadrons. These radars were connected by data link with other radars of the U.S. Air Force and Navy to mutually provide a complete picture of all aircraft operating in the theater.

The MarCent commander, LtGen Walter E. Boomer, was photographed on the evening of 24 February 1991.

Col Chenoweth was on hand for a "First Casualty" at the 1st Marine Division command post aid station, where a Corpsman dressed a wound as Chenoweth sketched. The art team was en couraged to visit all members of the command, from outpost troops to the command center.



One of a battery of Iraqi 57mm antiaircraft artillery pieces about eight kilometers east of the Al Jaber Air Base seen on 3 March 1991. In the background are burning wellheads of the Burqan Oil Field and treelines of the "Emir's Farm." Iraqi tanks counterattacked the 1st Marine Division out of this area early on 25 February 1991.

Although Iraqi pilots had flown more than a hundred tactical aircraft to dubious sanctuary in Iran and others had been shot down or destroyed on the ground during the air campaign, the Iraqi Air Force was still capable of delivering conventional and chemical weapons.

Like air support, fire support went according to plan. Since coordination occurred at the lowest possible levels, the I MEF fire support coordination center needed to perform relatively little "deconfliction". Perhaps the most serious incident in this area arose at 1st Marine Division around dawn during the initial assault on 24 February. A unit of Task Force Ripper mistook an infiltrating element of Task Force Grizzly as Iraqi, and fired upon it, killing one Marine before the situation clarified and the center was able to get word out to cease firing. These were the last fratricide fatalities involving Marines of the campaign. Division boundaries and fire support coordination lines were generally shifted promptly as the need arose. There were instances later, however, of Marine units attacking the enemy across division boundaries without coordination when the tactical situations required immediate responses. Both divisions' artillery regiments, the 10th and 11th Marines, employed three main types of ammunition in roughly equal proportions. Against armor and secondary personnel, they fired dual purpose improved conventional munition rounds containing 80 armor-piercing bomblets. The standard anti-personnel round was high explosive. Long-range targets out to 30,000 meters were engaged with rocket assisted projectiles. Augmenting the force's standard M198 155mm howitzers were a dozen larger self-propelled M110A2 8-inch (203mm) howitzers.

The Marine artillery regiments effectively employed AN/TPQ-36C/37 counterbattery radar out to ranges of 32,000 meters. Rapid-response counter-

Col Billy C. Steed, left, force operations officer, and LtGen Boomer receive briefing shortly before departing the I MEF main command post near Al Khanjar for Kuwait at 0645 on 25 February 1991.

battery fire against Iraqi artillery and 120-millimeter mortars had the highest priority followed by antiarmor and antipersonnel missions. To preserve the momentum of the assault, the 11th Marines of 1st Marine Division contrived to use the targeting information it got from their radars in a novel manner. For targets within about 24,600 meters, the regiment used standard "quick fire" tactics. Targets beyond that range were given to an aviator assigned to the unit to pass to the FastFAC flying overhead the division in an F/A-18D jet. Of their first 42 counterbattery targets on 24 February, 11th Marines passed 17 to Marine air. Although this short-circuited air control doctrine, the exceptionally short time required to get aerial or artillery munitions on target was unprecedented.[40]

During the initial stages of the assault, the force's divisions were beyond maximum range of the 2,700-pound projectiles of the 16-inch guns of battleships USS *Missouri* (BB 63) and USS *Wisconsin* (BB 64) offshore. However, these immense guns were put to good use in support of the Joint Forces Command-East along the coast and were controlled by teams from 1st Air and Naval Gunfire Liaison Company.

The strong southeast wind and rain reduced the opportunity for the Iraqis to effectively launch chemical weapons from indirect fire systems. Nonetheless, all personnel in the assault wore chemical protective suits and boots at level 2 of Mission Oriented Protective Posture (MOPP 2) and were prepared to immediately don masks and gloves. At 0656 a vehicle from the 2d Marine Division's 2d Assault Amphibian Battalion attached to 6th Marines encountered a chemical mine in Lane Red 1. Two Marines were slow in getting masks and gloves on

and received minor chemical burns from a mustard-type blister agent. A nearby German-supplied Fuchs chemical warning vehicle, dubbed Fox by the Marines, detected a "possible nerve/mustard agent" at the same time and transmitted a warning to the force. The warnings were taken seriously and both divisions went to maximum protection MOPP Level 4 and donned chemical protective gloves and masks.[41]

For a time, it seemed that the worst fears of every Marine in the force about Iraqi chemical weapons were being realized. As it turned out, however, all further chemical warning reports during the Marines' ground campaign proved to be false. The sensitive gear on board the Fox vehicles did detect slight traces of toxic chemicals, but these may have come from residues from the numerous burning oil wells. Another worry had been potentially dangerous levels of hydrogen sulfide gas from the Umm Gudair Oilfield. This did not materialize. Combat engineers found the gas being harmlessly torched off. In any case, it took technicians in the vehicles about six hours to accomplish confirmation tests which served to prolong the suspense. To add to the problem, at 1116 the U.S. Army reported a "positive anthrax sample from lab" and "dead sheep" in the area of King Khalid Military City in the ArCent area of operations.[42] Even though Marines encountered no more active chemical or biological weapons, there were a series of warnings from the sensitive detecting devices. Marines in the attack stayed in their MOPP suits for the next 24 to 72 hours depending on unit and location. Thanks to relatively cool temperatures (it was never over about 70 degrees during the battle), the suffocatingly close garments were marginally bearable, although their charcoal liners left a black residue on exposed skin that gave the wearers coal miner visages.

The two command-and-control variant light armored vehicles of LtGen Boomer's mobile command post ("jump CP") are seen on 25 February 1991. These same vehicles were used in a deception operation earlier at the border near Al Manaqish, complete with a major general impostor to convince the Iraqis an attack would come from that corner.

At the I MEF command center, Generals Boomer and Hearney closely tracked the progress of the assault on the position locating and reporting system display on Jack O'Connor's computer. After the earlier alarming chemical report, messages on carbon paper flimsies called "yellow canaries" began to flow in that indicated that the assault was going very well indeed. From 2d Marine Division's General Keys at 0801: "Progressing (in) smooth, timely manner."[43] At 0815, General Myatt at 1st Marine Division: "Things going well."[44] A few minutes later, reports came in concerning the capture of the first significant batches of enemy prisoners: about 100 by 6th Marines and more by Task Force Grizzly. By 0930, Grizzly was through the second mine belt. By mid-afternoon, the bulk of both divisions were through the second breach and were beginning to take more prisoners. To General Boomer's relief, there were few casualty reports. Although the MEF command operations center continued to receive sporadic reports of chemical weapons, these weapons didn't seem to be having much effect on the progress of the operation which was going faster than anyone had hoped.

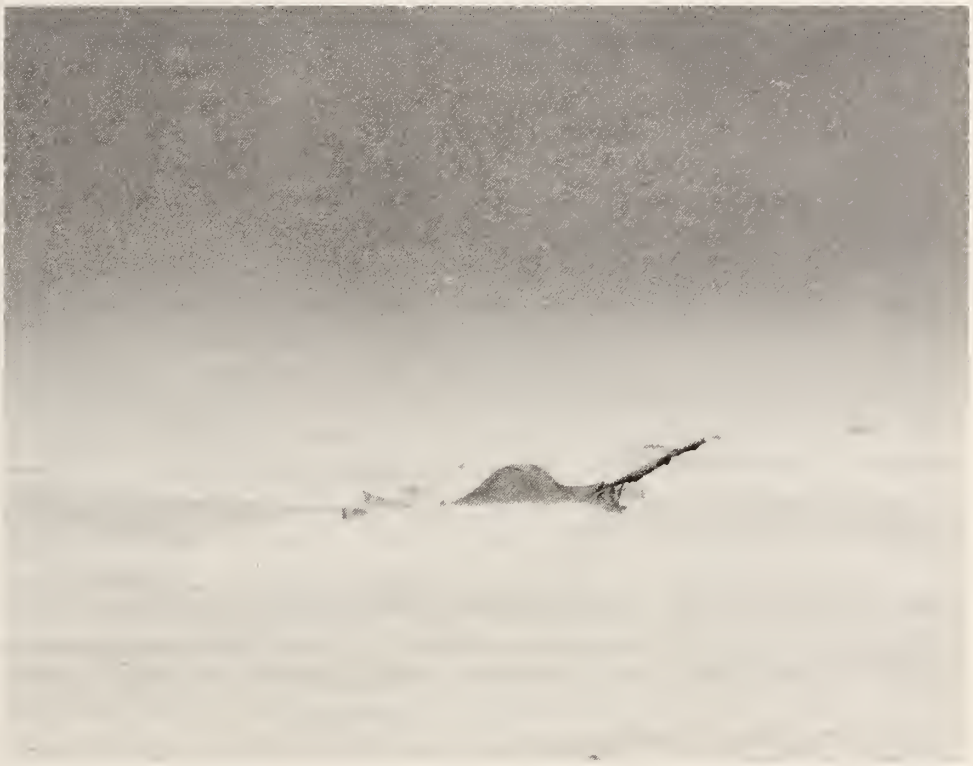
In the early afternoon, Lieutenant General Boomer received a call from General Schwarzkopf concerning the allied main attack with VII Corps and the Joint Forces Command-North immediately to MarCent's left. The Combined Operations Plan called for the main attack to commence the following morning. The Marines' speedy progress caused Schwarzkopf to worry aloud to Boomer about possible exposure of I MEF's left flank once they came abreast of Manaqish where the border turned due west. General Schwarzkopf wanted to get the main attack going and sought Boomer's opinion. The left flank was a concern of Boomer too, who also felt that the Iraqis might try to retreat through northern Kuwait. General Boomer recommended that the main attack begin as soon as possible. Shortly after this conversation, General Schwarzkopf ordered the main attack to commence. Although ArCent's VII Corps crossed its line of departure at 1500, the Joint Forces Command-North attack on MarCent's left flank was delayed until after 1800. It stopped just inside their breach for the night.

To the east, General Myatt at 1st Marine Division wanted to launch a heliborne assault over the mine belts using battalion-sized Task Force X-ray at 1700. The I MEF air officer, Colonel John F. Amend, Jr., gave the go-ahead if the landing zone was secure. It wasn't; the Iraqi infrared heat-seeking missile threat had not been suppressed. A Marine AV-8 Harrier and an OV-10 Bronco were lost nearby on the next day to these weapons with one aircrew killed in action and one captured.* The mission was scrubbed for the day at 1945 after an aborted liftoff at 1745.

In the meantime at 1753, Task Force Ripper consolidated its position around the eastern side of MEF Objective A, the Al Jaber Air Base. However, it was

---

*Capt D. M. Spellacy of VMO-2 was killed in action. The other OV-10 crewmember, Major J. J. Small, was captured. Capt J. S. Walsh ejected from his crippled AV-8 and was rescued by Marines on the ground.



An Iraqi tank decoy is one of three a few kilometers north of Al Jaber Air Base.

The same decoy unmasked later.

nearly dark by then and it was not practical to begin clearing the airfield until the next day. If the base was suitable, General Boomer intended to use it as the next main command post for I MEF. General Moore also wanted to use the airfield as a forward aerial resupply point (FARP) and to push out I MEF's air defense umbrella by placing Hawk missiles there. Further east, on the other side of the Burqan Oilfield, the Joint Forces Command-East was making fine progress until it ran into the Iraqi *18th Infantry Division* occupying positions in the built-up areas along the coast north of Ras az Zawr.

The Marines conducted their breachings rapidly. As I MEF forces emerged out of the second obstacle belt, the first significant numbers of Iraqi troops began to surrender. The estimated number of enemy prisoners of war (EPWs) taken on G-Day was more than 8,000. Most of them were infantry who suddenly found themselves surrounded by Marines. In this regard, deception and the speed of the Marine attack worked as well as General Boomer had hoped. However, the EPWs became a logistical problem that threatened to slow the advance. The rapid reversal of fortunes stunned many Iraqi troops, but in general, the prisoners were orderly and cooperative. Late the next day, 25 February, Brigadier General Krulak at the Direct Support Command was able to gather up some transport to evacuate the EPWs by using empty returning logistics support vehicles and Saudi buses.* The Marine drivers somehow squeezed their buses through the breach lanes which still had mines remaining in their sand wind-rows. Most of the prisoners spent a cool and wet night or two huddled in the open before the DSC could move them in stages to the main EPW compound at Kibrit. They were given the same water and food rations as Marines.

To support the force in the attack, the Direct Support Command used a "push" system. To eliminate the inherent lag of processing resupply requests, General Krulak and his staff selected items of resupply they believed would be most requested by the attacking units. The command brought these forward through the breaches the night of 24-25 February to place them immediately next to combat units. The first women Marines through the breaches were drivers of resupply vehicles. To keep up the pace of resupply through the breaches, Marine combat engineers continually improved the main supply route from Al Khanjar. Engineers and Navy SeaBees accompanied the two artillery regiments for quick construction of emplacements between the obstacle belts. Other SeaBees improved the main supply route from Qaraah through the 1st Marine Division breaches to eventually connect with a paved road about five kilometers southeast of Al Jaber Airfield.

As I MEF moved toward the barriers early on 24 February, amphibious ships carrying the 5th Marine Expeditionary Brigade steamed closer to Mishab in order to launch its ground and aviation combat elements ashore as the force reserve. The commander of Regimental Landing Team 5, Colonel Randolph A.

---

*The buses had been configured for mass casualty medical evacuation with up to 60 litters each for use in areas where helicopters could not operate because of air defense threats.

"Gangster" Gangle, informed his officers of their new, and heretofore closely held, mission by announcing simply: "Gentlemen, the enemy is northwest. That's where we're going. Move out."[45] The brigade's Marine Aircraft Group 50 commanded by Colonel Randall L. "Grit" West flew the brigade's heliborne assault unit, Battalion Landing Team 3/1, to positions occupied by Task Force Troy, the deception unit located south of Al Wafrah. The next day the team conducted a raid towards Al Wafrah to keep up the deception, taking 13 prisoners in the process. The rest of the regimental team and its equipment came ashore in LCAC air-cushioned landing vehicles in the first such landing ever conducted during a combat operation. After unloading on the narrow beach at the port of Mishab, the remaining three battalions embarked on a 70-kilometer road march to blocking positions north of Kibrit. Marine Aircraft Group 50 based itself at Tanajib Airfield while Brigade Service Support Group 5 worked to unload sustainment and equipment at Jubayl and Mishab respectively.

At the I MEF evening brief, the reactions of the force commander and the staff were muted. General Boomer told his staff that he thought the attack "was going too well" and counseled that it "can't continue. You need to prepare for that. Keep 'worst-casing' it."[46] It was much too early for anything like exultation and Boomer worried aloud that there could be surprises ahead.

Counterattack and Exploitation

During the night of 24-25 February, both divisions assumed defensive postures. There were only 1,100 sets of night vision goggles available in the force and apart from Tiger Brigade neither unit was particularly well equipped for night fighting. General Myatt established the 1st Marine Division forward command post at the southwest edge of the Burqan Oilfield next to a large tract of tamarind groves nicknamed the "Emir's Farm." The trees were interspersed with burning oil wells, some of which shot out roaring flames more than a hundred feet high. General Keys set up 2d Marine Division's forward command post a few miles northwest of Al Jaber Airfield. That night there were many electronic sensor warnings that indicated vehicle movements north of the 2d Marine Division. Before they could be checked out, two precious pioneer remotely piloted vehicles crashed around midnight during landing in difficult weather. The accidents ruined their night reconnaissance equipment.

At 0400, the I MEF Marine all-source fusion center for intelligence reported that the Iraqi *3d Armored Brigade* and *8th Mechanized Brigade* were on the move in the southern Burqan Oilfield near Myatt's CP and also moving south along the division boundary north of Al Jaber Air Field. At about 0415 elements of an Iraqi counterattack encountered forces on the left flank of 1st Marine Division. Then the main Iraqi counterattack, obscured by smoke and fog, blundered into the right flank of the division. Shortly after that, a second Iraqi force came in contact with the division's center.

Men of Company G, 2d Battalion, 7th Marines, prepare to clear trenchlines and bunkers at the southern perimeter of Al Jaber Air Field on 26 February 1991.

At 0555, just at first light, Company B of the 4th Tank Battalion, a Reserve unit from Yakima, Washington, attached to the 8th Marines, 2d Marine Division, detected a column of T72 tanks. The Iraqi armor force was moving south just inside the 1st Marine Division's sector. There was no time for the company's commander, Captain Ralph F. Parkison, to buck the information up the chain of command. After reconfirming what he saw in his thermal sights, he ordered his company of M1A1 tanks to engage. The battalion that the company was supporting immediately joined in with combined arms. After a brief and intense anti-armor engagement, 34 out of 35 enemy tanks were out of action.*

At 0835, a 1st Marine Division forward air controller spotted tanks that he tentatively identified as T72s about 5,000 meters east of General Myatt's command post and directed AH-1 Sea Cobras to attack them. About 50 minutes later, 1st Marine Division reported "enemy tanks and troops flushed from Burqan area. Much confusion."[47] Myatt and his staff were convinced that the burning oilfields were much too inhospitable to support Iraqi operations and the direction of the attack came as a surprise. By 1008, the command group itself was in the thick of a melee, and its security force knocked out several vehicles. The 11th Marines massed their fires against the attackers from their positions on either side of the second barrier. Due to the obscuring smoke, the engagements occurred at relatively short ranges. In one instance a few hours later, a M198

*Company B left its older M60A1 tanks at its home armory in Yakima. After 23 days of training on M1A1 tanks at Twentynine Palms, California, the unit flew to Jubayl to draw the 13 new M1A1s they took into combat.

155mm howitzer battery near the Emir's Farm successfully engaged an Iraqi multiple rocket launcher system with direct fire only 800 meters away in the center of what turned out to be a brigade of D20 152mm howitzers.

The discovery of the counterattack, and the Marines' prompt response to it, disrupted the Iraqis who were defeated by antitank fire, tank main guns, and air attack in a series of actions lasting until the middle of the day. Although at a seeming disadvantage in their older Chrysler M60A1 tanks equipped with a 105mm gun, 1st Marine Division tankers achieved high rates of success with armor-piercing discarding-Sabot, fin-stabilized depleted uranium rounds. The tank engagements that day were the largest in Marine Corps history.

While the counterattacks were being dealt with, a command group of 48 Marines including Lieutenant General Boomer, Colonel Steed, and a news correspondent mounted two command variant light armored vehicles and some utility vehicles. They departed the I MEF main command post at 0650 to join Major General Keys at 2nd Marine Division. Major General Hearney ran the main command post in Boomer's absence, assisted by Colonels Lohman and Bedard. By 0806, Boomer's group had crossed through the breaches and was discussing plans with Keys for an attack further north. The purpose was to seize a built-up area of concrete block corrals and buildings laid out in a pattern that looked on a map like an ice tray of a refrigerator, which is how it became known. The Ice Tray dominated the area between Al Jaber Air Base and the

Col James A. Fulks, commander of Task Force Grizzly, was photographed on 26 February 1991 during clearing operations at Al Jaber Air Base. As operations officer of the 1st Marine Division, he had earlier argued successfully to move the site of the force's penetration points to less well defended areas.

western part of Kuwait City and was the main operating area of the Iraqi *3d Armored Division*. However, 1st Marine Division was fully occupied with the counterattack, so General Boomer and the two division commanders agreed to postpone the attack. The shifting of the axis of the attack from northeast to north meant that 1st Marine Division had to come left and move north about another about 10 kilometers to get abreast of 2d Marine Division.

This delay didn't bother higher headquarters; I MEF was now far ahead of the Coalition Forces on each flank. At midday, Colonel Bedard at the I MEF Combat Operations Center received a call from Major General Burton Moore, USAF, General Schwarzkopf's operations officer. He asked if I MEF would agree to holding up at Phase Line Red, an east-west road about 10 kilometers north of Al Jaber Air Base, while the allies caught up. This was acceptable and Phase Line Red became the next jumping-off line in the attack.

During the day, Task Force Grizzly moved up from its breach to clear Al Jaber Air Base. Grizzly's commander, Colonel Jim Fulks, requested to use a riot agent (tear gas), but General Hearney at the MEF command center turned him down. The Iraqis were still holding off on chemical attacks, and Hearney didn't want the Marines to be the first to use any type, even a non-lethal irritant. A half hour later, the direct air support center got a message from Tiger Brigade saying that they had captured an artillery brigade commander who said his unit had no chemical weapons. Interrogations of other Iraqi officers later indicated that all artillery-delivered chemical weapons were stored at *III Corps* headquarters in the vicinity of Kuwait City. Because of the Marines' rapid advance and their control of the main Iraqi resupply routes by air, it is not likely that the Iraqis would have had either time or the ability to move chemical munitions down to their associated weapons systems. However, there was no evidence that a decision to use them was made in the first place.

By noon on 25 February, the Iraqi counterattack was petering out. Both divisions reached Phase Line Red and began preparations to attack and seize two MEF objectives designated B and C. The 2d Marine Division on the west was to seize Objective B, the area around the main supply route intersections near Al Jahra, about 33 kilometers west of Kuwait City. The 1st Marine Division on the east was assigned Objective C, Kuwait International Airport about 15 kilometers south of Kuwait City on the southern edge of the city's built-up area.

By 1341, all of 2d Marine Division's assault elements had crossed the line of departure at Phase Line Red to begin the attack on the Ice Tray. This feature and a 25-kilometer-square walled enclosure immediately northeast of it containing Kuwait's radio and television transmitters dominated the terrain ahead. The 6th Marines in the center of 2d Marine Division had the task of seizing the Ice Tray. The preparatory artillery fires of 10th Marines' M198 batteries prompted a number of Iraqis to come forward to surrender. Within an hour, the division was reporting numerous tanks destroyed and even more EPWs from the Ice Tray area. Throughout this period, the division received artillery fire in return, but it was neither well-directed nor in much quantity. By mid-afternoon, the division reported 8,000 EPWs in custody.

General Boomer felt the situation was well enough in hand for him to shift his mobile command group ("jump CP") to the southwest corner of the Ice Tray later that evening. That afternoon about 25 kilometers east southeast of the Ice Tray, 1st Marine Division consolidated its positions to the north and east of Al Jaber Air Base in the wake of the counterattack.

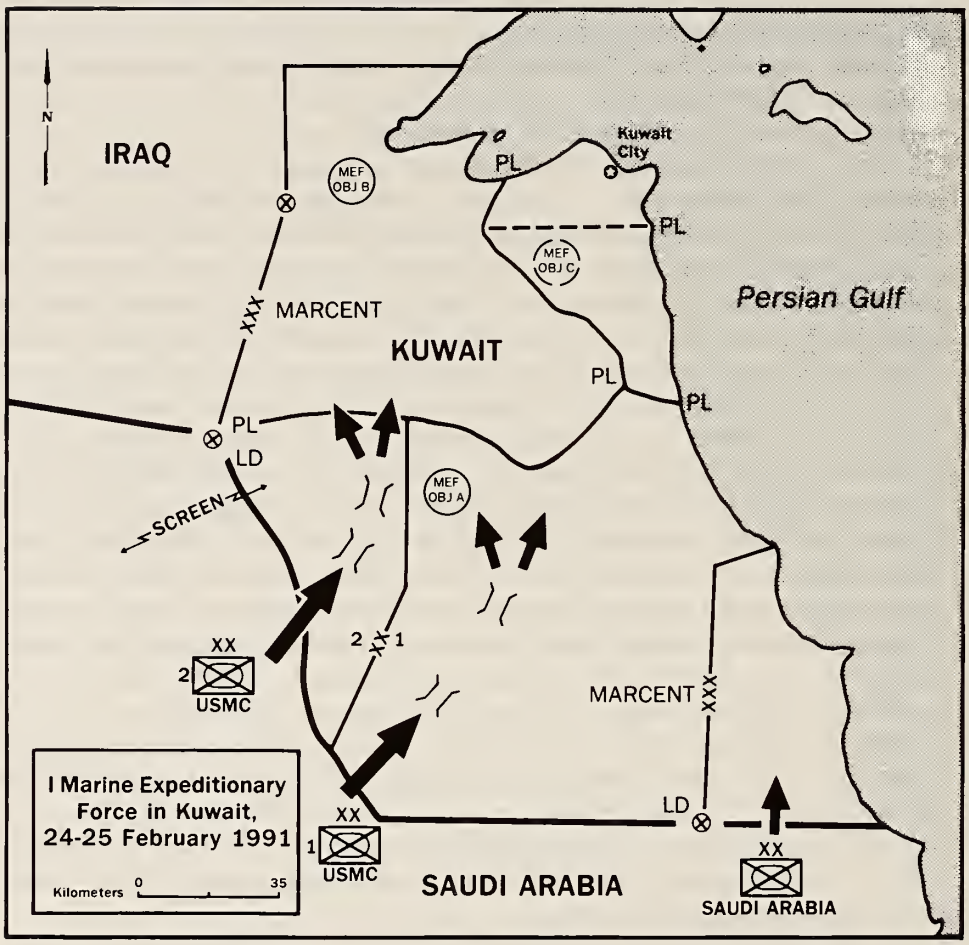
As darkness descended, Marine forces once again set up defenses for the night. The divisions were in a staggered formation with 2d Marine Division at Phase Line Horse, an east-west line running immediately north of the Ice Tray. The divisions' advance had now taken them far enough north that they were within the fan of USS *Missouri*'s 16-inch guns. At 1815 Boomer asked the I MEF fire support coordination center if the ship could fire safely into the MarCent area of operations. Colonel Bill Schopfel radioed back that there were no spotters available, human or remotely piloted vehicle, to control fires near the force. However, he could and did clear the ship to fire at targets at Kuwait International Airport, the final objective of the 1st Marine Division. In turn General Myatt radioed to General Boomer that 1st Marine Division's attack toward the airport would begin at first light but no earlier than 0600, weather permitting. Myatt also requested Cobras and the heliborne PsyOps team for the next day since the division would be moving into built-up areas. At the 2d Marine Division, General Keys' planners worked through the night to develop a plan for the attack on the Al Jahra chokepoints. During the night, both artillery regiments moved their artillery forward by echelons. The poor visibility caused by dense smoke from the Burqan Oilfield hampered their progress to their new sites and caused General Boomer to worry about the potential for fratricide incidents.

By 2218, General Boomer established his forward command post about five kilometers southwest of the Ice Tray, just south of an east-west berm. The area was not completely secure, and:

> . . . the command convoy was suddenly surrounded by armed Iraqis. Confused radiomen screamed warnings about "dismounted infantry!" Some Iraqis appeared ready to surrender, others remained prone behind sand berms with rifles pointed toward the convoy. It turned out that the Iraqis were indeed surrendering, but the convoy was immobilized for three hours while the Marines rounded them up.[48]

Boomer, as all of his commanding generals, had positioned himself where he thought he could get the best awareness of the situation.

At the I MEF main command post beginning about 1950 that evening, seismic intrusion devices from 1st SRIG's Sensor Control and Management Platoon (SCAMP) and moving target indicator radars on board Marine A-6E Intruder aircraft began picking up vehicle movements near the Ali Al Salem Air Base, located to the north of Tiger Brigade. As the night progressed, there were other intelligence reports indicating movements, but none of the reports



Col Chenoweth saw that, as point vehicles engaged the enemy, following troops often were called upon to mop-up by-passed Iraqis. In "Flank Threat," Marines have sprung into action from a LAV to secure the flank as enemy are spotted. The terrain is littered with knocked-out enemy vehicles.

gave enough detail to form a picture apart from a conclusion that the amount of the activity seemed to be increasing as time passed.*

At about 0136 on 26 February 1991, both I MEF and CentCom sensors began detecting very large amounts of vehicle movements in the vicinity of Kuwait City. At the I MEF combat operations center, the night air officer, Colonel James L. Whitlow, and the senior watch officer, Lieutenant Colonel John A. Keenan, compared reports. They became concerned that an Iraqi counterattack might be developing. Within an hour, reports from the prototype Joint Target Attack Radar System (JSTARS) aloft made it obvious that all this activity was a major retreat by the Iraqis.** The Kuwaiti Resistance soon confirmed the electronic reports. General Boomer decided that it was time to slam the door shut on the escape route.

General Boomer directed Whitlow to launch as many aircraft capable of night attack as possible. The weather turned sour again with rain and poor visibility which restricted the attack to all-weather A-6E Intruders, which had moving target indicators and forward looking infrared (FLIR), and FLIR-equipped F/A-18 Hornets from Marine Aircraft Group 11 at Bahrain. After sunrise, they were reinforced by more Hornets. Joining in also were AV-8B Harriers from Marine Aircraft Group (Forward) 13 staging from King Abdul Aziz Naval Base, Jubayl, and Tanajib. None of the attack pilots had ever seen anything like it.

The first Intruder attacks bottled up the main route with CBU-78 Gator aerially delivered mines that forced many of the Iraqi convoys off the superhighway onto the desert. Immediately following this, the Marine flyers attacked the vehicles continuously with 500- and 1,000-pound bombs and MK20 Rockeye cluster bombs. The attacks continued into the evening of 26 January. Marine Aircraft Group 11 flew 298 combat sorties that day, and during the peak, its commander, Colonel Manfred A. "Fokker" Rietsch, personally directed the attacks from an F/A-18D, completing his 66th and final combat mission of the operation.*** Despite the weather, hundreds if not thousands of vehicles were destroyed, damaged, or abandoned along the main supply route from Kuwait City to Safwan, Iraq. The section of highway into and out of Al Jahra, later dubbed the "Highway to Hell," was choked with burning Iraqi vehicles. Along the grade leading up the Mutla Ridge, the Marine attacks left vehicles

---

*Along with these reports came several others concerning Scud launches at targets in Saudi Arabia. One Scud impacted a billet in Dhahran, killing 28 American National Guardsmen and wounding 98 others.

**The prototype JSTARS radar could detect movement over a wide area. However its accuracy degraded over time, and the coded-text reports it transmitted took time to decipher. Nonetheless, officers of the force were highly impressed with the potential of the system.

***Colonel Rietsch's total of 66 combat missions was the highest number flown by any Marine during the campaign and is believed to be the highest flown by any pilot in the theater. The total excludes 118 combat air patrols flown over the northern Gulf, 24Aug90-15Jan91. Rietsch also flew 653 combat missions in F-4B Phantoms in Vietnam, bringing his career total to 719.

strewn like jackstraws for hundreds of meters on both sides. Also attacking the retreating Iraqis were other aircraft from CentCom's air arsenal.

At 0400 on 26 February 1991, General Boomer ordered the 2d Marine Division to attack and seize blocking positions astride the Mutla Ridge and around the Al Jahra superhighway intersections. The boundary between the two divisions was adjusted to give the 8th Marines a bit more room on the right flank. The 8th Marines' objective was an area of orchards and covered water reservoirs that would anchor 1st Marine Division's Task Force Ripper's left flank. The 2d Marine Division attack jumped off after 1st Marine Division's in order to give the 1st Marine Division time to move more forces abreast of the 2d Marine Division. After sunrise, General Boomer moved the I MEF "jump" command post up to a point 28 kilometers due south of the Al Jahra intersections.

To the east, Task Force Ripper crossed the line of departure east of Al Jaber Air Base with M60A1 tanks and LVTP-7A1 assault amphibious vehicles at 0700 and began working their way north toward the intersection of the Sixth and Seventh Ring Road freeways, 10 kilometers west of Kuwait International Airport. Unfortunately the southeast wind persisted in blowing a dense pall of smoke from the Burqan Oilfield across Ripper's avenue of advance. The smoke reduced visibility in places to less than 100 meters and was so thick it blotted out the sunlight completely. Marines encountering the smoke zone nicknamed it the "Land of Darkness." Close-in fire support and forward scouting by Sea Cobras appeared to be impossible. Disregarding the appalling conditions, Lieutenant Colonel Michael M. Kurth, the commander of Marine Light Helicopter Attack Squadron 369, led a flight of five Sea Cobras up from Landing Zone Lonesome Dove to a spot just outside Al Jaber Air Base. Leaving his wingmen there, Kurth flew singly up to the smoke zone in a Bell UH-1N Huey utility helicopter with jury-rigged laser designation equipment on board. Then with his landing skids nearly touching the ground, he flew along the road north of Al Jaber, at times actually flying underneath high tension wires, until he located Ripper. Retracing his tracks, he brought his wingman back through the smoke. Ripper got its Cobra support that day.*

By mid-morning, mechanized task forces of 1st Marine Division were advancing well, and they began encountering large numbers of surrendering Iraqi troops and abandoned vehicles. Marines quickly disarmed the Iraqis and then passed them through the lines to keep up the momentum of the attack. Although Al Jaber Air Base was virtually secure, Task Force Grizzly could not fully clear it until afternoon because of the large amount of unexploded aerial munitions scattered about. Grizzly gathered in several hundred prisoners, and 3d Marine Aircraft Wing support units began setting up a forward replenishment point so its Sea Cobras could support the final push north. The wing also emplaced Hawk missiles that evening near the airfield.

---

*LtCol Kurth was awarded the Navy Cross for his actions. He also was presented the Marine Corps Aviation Association's Alfred A. Cunningham Award as Aviator of the Year.

Grisly humor is displayed at Al Jaber Air Base. During the advance toward Kuwait City, livestock got loose from a dairy farm about 30 kilometers north of the base. This cow, along with a horse and a number of camels, attempted to forage on vegetation that had been contaminated by droplets of oil from the smoke of hundreds of burning wellheads from the nearby Burqan Oil Field. None of the animals survived the ecological disaster in this area.

At 1200, General Keys launched the 2d Marine Division's final attack. To the west, Tiger Brigade under command of Colonel John Sylvester raced north over generally open desert in its Abrams M1A1 main battle tanks and M2A2 Bradley fighting vehicles. At about 1320 the brigade engaged 20 tanks about 17 kilometers south southwest of the Al Jahra intersection. After capturing 500 prisoners there, it charged northeast along the Mutla Ridge, passing through some unanticipated minefields, antiaircraft artillery sites, and armored defenders along the ridge. At the intersection of the ridge with the Kuwait-Iraq main highway, it engaged tanks attempting to move through the area, destroying some and forcing crews of others to surrender. By about 1930 Tiger Brigade had seized and sealed off the two major highway intersections north of Al Jahra overlooking the smoking clutter of *III Corps* vehicles.

The 6th Marines in the center of the division proceeded on its way north from the Ice Tray toward two parallel east-west freeways that intersected at Al Jahra. They passed through quarries, dumping grounds, automobile junk yards, industrial areas, and other uninviting terrain to straddle the lower freeway southeast of the town of Al Jahra. The regiment encountered little resistance and took many prisoners. All the Marines were astounded at the numbers of destroyed and abandoned Iraqi vehicles. Each seemed to have loot from Kuwaiti

homes spilling out of it. The 8th Marines also reached its objective, a wooded area at As Sulaybiyah seven kilometers north of the Kuwait television and radio transmitter site it had taken earlier.

To the west of 2d Marine Division, Egyptian forces moved steadily in set-piece fashion toward their objective, Ali Al Salem Air Base. By 1955 they were within 4,000 meters of it, but a skirmish held them up and prevented them from taking the airfield until the next morning.

To the east at about 1336, 1st Marine Division formed a line with Ripper, Papa Bear, and Shepherd 14 kilometers south of the Sixth Ring Road. Ahead of them were eight Sea Cobras providing close in fire support. Shortly afterwards, Task Force Papa Bear wheeled right to cross the northwest part of the Al Magwa Oilfield to point itself at Kuwait International Airport. Reports throughout the morning indicated little activity at the airport after the previous night's pounding by USS *Missouri*'s 16-inch rifles. Task Force Ripper continued north towards the key intersection of the Six and Seventh Ring Roads while Task Force Shepherd arced well to the east to screen the division with its light armored vehicles. The mission was not made any easier in the late afternoon, when a powerful southeast wind rose with gusts to 36 knots. The wind kicked up sand and oil smoke alike into a thick brown-black obscuration that reduced forward visibility to less than 100 meters at times.

At 1647 1st Marine Division reported that Task Force Ripper was engaged with a "tank division" just inside the loop of the Seventh Ring Road where it turned north to intersect the Six Ring Road. A call went out for more Cobras. After a series of engagements that evening, Ripper moved north to seize the intersection which was bordered to the north by a blacked-out residential area. (All Kuwait City had been without power or water since 17 February, when the Iraqis began destroying public utilities.)

Trucks hauling artillerymen and M198 howitzers of the 5th Marine Expeditionary Brigade, I MEF's reserve force, negotiate the half-meter-deep mud of a sabkha (salt flat) near the 2d Marine Division's outer breaches on the morning of 27 February 1991. They are near the end of an all-night road march from blocking positions south of Al Wafrah. Iraqi combat engineers located their minefield barrier just inside areas of sabkha's to further obstruct attackers, but in general, trafficability on the battlefield was good.

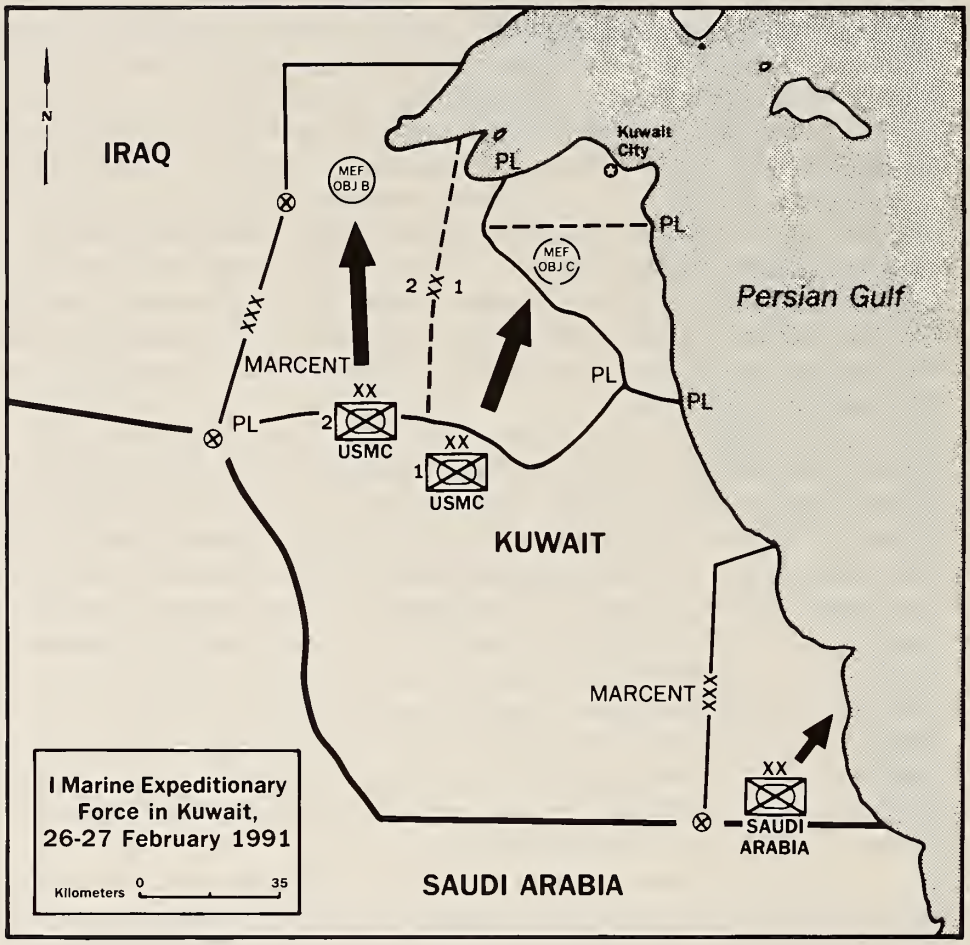
Further east, Task Force Papa Bear threaded its way through the northern edge of the Magwa Oilfield just south of Kuwait International Airport. Screening it to the east was Shepherd, which managed to move along the east side of the airport and occupy parts of it by 2040 that night. A little earlier, at 2012, General Myatt had radioed that "all of Kuwait City is in friendly hands to include (main supply routes), police station, and airport."[49] This report did not mean the fighting was over. Shortly afterwards, an Iraqi mechanized force ran into elements of Task Force Papa Bear along the Seventh Ring Road freeway near the airport's southern perimeter. A brisk firefight ensued. Following this action, General Myatt shifted Shepherd from its blocking position to the east to conduct the final assault on the airport. By dawn on 27 February, the airfield was occupied by 1st Marine Division and Task Force Taro was brought forward to clear it.

During the afternoon of 26 January, General Hearney ordered up the force reserve, Regimental Landing Team 5, through the breaches to handle the increasingly large numbers of prisoners and to protect main supply routes inside Kuwait. For the EPW mission, he attached Battalion Landing Team 3/1 to the 2d Marine Division. Marine Aircraft Group 50 helolifted them directly to the Ice Tray. Meanwhile the rest of Regimental Landing Team 5 had only just arrived in its blocking positions north of Kibrit from its landing at Mishab when it received orders to continue in trace of the force's divisions to provide security for the main supply routes. Battalion Landing Teams 2/5 and 3/5 and their supporting artillery unit, 2d Battalion, 11th Marines, began a bone-jarring 200 kilometer road march toward Al Jaber Air Base that lasted all day and all night. Assisting in the EPW and route security missions was the Marine Corps Reserve's 2d Battalion, 24th Marines.

That same day General Krulak at the Direct Support Command ordered the establishment of a forward logistics transfer area along the western perimeter of Al Jaber Air Base. This location was the junction of the Kuwaiti road network with the 76-kilometer-long "Al Khanjar Expressway" that went via 2d Marine Division's breaches. Although Marine combat engineers labored constantly to maintain the four-lane dirt "expressway" main supply route, the daily rainstorms turned a few portions of the route near the breaches into quagmires.

Marine assault helicopters flew high priority resupply items over these difficult areas from Landing Zone Lonesome Dove and Al Khanjar to division supply points. To thwart the heat-seeking missile threat, the pilots flew at only one or two hundred feet altitude along secure routes. The six heavy transport Sikorsky CH-53D and -E Sea Stallion squadrons of Marine Aircraft Groups 16 and 26 flew most of the tonnage. The groups' five squadrons of Boeing Vertol CH-46E Sea Knights assisted them and flew virtually all of the medical evacuation flights of Marines and Iraqi prisoners as well.

To provide the divisions' ready support, the Direct Support Command stocked two days' supply of water, fuel, and ammunition at Combat Service Support Detachment "Jaber" and built storage for 300,000 gallons of water and 600,000 gallons of fuel. Combat engineers also put a 120,000-gallon-per-day water well into operation, which freed up transportation assets. From this point,



Marine in helmet and flak jacket clears his weapon before entering the I MEF headquarters compound. Col Chenoweth's "Scorecard" will remind Marines who were there of the six-step procedure for emptying small arms into similar constructions.

Arab Coalition troops from the Joint Forces Command-East celebrate the liberation of Kuwait City below the city's landmark water towers on 1 March 1991. This was accompanied by much firing of weapons, to the distress of their American Marine allies.

about 388 kilometers from the port at Jubayl, the DSC supported both divisions by use of the 40-kilometer-long hard-surface road that connected Al Jaber to the Sixth and Seventh Ring Roads.

To the east of I MEF late on the afternoon of 26 January, the Joint Forces Command-East broke out and rolled north along the coastal freeway. Marine reconnaissance pathfinder teams were in the lead. The way to the American Embassy seemed clear, and in accordance with the Combined Operations Plan, one team, under 1st Lieutenant Brian G. Knowles, made a dash for it in conjunction with Saudi teams headed for their own embassy nearby. At last light, the team entered the compound where Knowles found a tattered American flag still flying. The team then carried out a careful clearing operation in the dark and then declared the embassy secure at about 2210. Satisfied that Iraqi resistance within the city was nearly finished, General Boomer moved his forward command post next to 2d Marine Division's amidst junk yards about seven kilometers south of Al Jahra.

Consolidation and Victory

During the night of 26-27 January 1991, General Hearney and the I MEF staff worked to coordinate a tricky passage of lines by Coalition forces. At about 0400, General Sultan sent a Joint Forces Command-East composite battalion of commanders and troops from Saudi Arabia, the United Arab Emirates, Qatar, Oman, Bahrain, and Free Kuwait to enter Kuwait City through Task Force Shepherd's positions east of Kuwait International Airport. To the west at the same time, Egyptian and Syrian units linked up with 2d Marine

Division on the road just east of Ali Al Salem Air Base. Later that day the two Arab forces joined in the center of Kuwait City near its landmark water towers. The original plan called for 2d Marine Division's assault units to go all the way to Kuwait Bay. However, by dawn on 27 January, organized Iraqi resistance ceased within the city. The division's forces consolidated at its objectives, roughly 5,000 meters south of the bay. All MEF objectives were seized. The primary goal became the facilitation of the link-up of Joint Forces Commands-East and -West for a formal liberation of Kuwait City.

The liberation of Kuwait City had always been the mission of the Coalition Forces, but that is not to say that Marines were not participants. All forward lines of I MEF were now in, or adjacent to, built-up areas. The MarCent area of responsibility went from slightly east of Kuwait International Airport, west along the Sixth Ring Road about 50 kilometers, to the eastern edge of Ali Al Salem Air Base. General Boomer and the command group entered Kuwait City from the west and drove to the American Embassy. They joined Lieutenant Knowles' team there at 1421 to become the second group of Marines to enter the central part of the city. Boomer's party, as all Marine units on the front lines of the force during the afternoon of 27 January, became the objects of adulation by Kuwaiti citizens who approached them repeating in English "Thank you" and in Arabic *Allahu Akbar* (God is great). The Marines were unprepared for the depth of the emotional thanks they received. Their chief concern shifted from the Iraqi threat to the increasing numbers of assorted firearms that the exuberant Kuwaitis began firing into the air.

Combat operations did not end for I MEF, however. Fixed-wing aircraft of 3d Marine Aircraft Wing continued to attack Iraqi units in northern Kuwait. Southwest of Al Jaber Air Base, units of Regimental Landing Team 5 turned south toward Al Wafrah to begin a five-day clearing operation of that bypassed area. That night, there were no ground combat actions except for some 120mm mortar round impacts near Kuwait International Airport and on the road to Al Jaber.*

The focus of ground combat action shifted to northern Kuwait and southern Iraq so the I MEF staff worked on plans to shift the main command post. The move never happened. The campaign had gone so swiftly that General Boomer decided the best location for it was back in Jubayl. Shortly before 0500 on 28 February 1991, Major General Hearney gathered the staff around a shortwave radio in the combat operations center. They heard President Bush on the World Service of the British Broadcasting Corporation order the cessation of hostilities to be effective at 0800 on 28 February 1991. After receiving confirming instructions from General Schwarzkopf's headquarters, General Hearney transmitted over the command frequency:

---

*The source of these remained a mystery. The ones along the Al Jaber road 29 kilometers north of the air base set off a long series of secondary explosions.

Brigade, which transported them to custody facilities in the rear. Recovered enemy dead were normally transferred to appropriate Saudi authorities unless immediate burial was indicated. Information on enemy deceased was documented according to guidelines specified in the Geneva Convention and this information was forwarded to the host nation with a copy sent through mortuary channels to General Schwarzkopf's headquarters. The 1st Force Service Support Group graves registration team handled a total of about 85 remains, including those of Marines but excluding those remains turned over to Saudi authorities.

Equipment casualties during combat were very light. The 3d Marine Aircraft Wing, which proportionately was in direct combat over a longer period, incurred the greatest losses. These were all the result of passive-guidance, heat-seeking missiles. A total of 11 Marine aircraft were struck by such missiles: two OV-10 Broncos, four AV-8B Harriers (including one from NavCent), and five F/A-18 Hornets. All of the Broncos and Harriers were brought down. Most of their crews were killed or captured.* The twin-engine Hornets managed to return to home base and all were repaired within 36 hours. Innovative tactics and electronic jamming by Marine fliers effectively thwarted Iraqi radar missiles and conventional antiaircraft artillery; these were the main reasons overall aircraft losses were low.

Retrograde

The final stage of Operation Desert Storm was the retrograde or return of American forces to their pre-conflict status. This effort was informally known as "Desert Calm." In the same manner that they deployed to Southwest Asia, the goal was for Marine units to return as elements of deployable Marine air-ground task forces, rather than by individual rotation. Units that had trained, deployed, supported, and fought together during Operations Desert Shield and Desert Storm stayed together. The purpose was to keep active duty personnel in stable, deployable, combat-ready units and to return mobilized Reservists with their units in order to ensure that the Marine Corps could meet its worldwide contingency commitments. The effect of keeping personnel together during the retrograde was synergistic. The result was a redeployment of Marines that was executed smoothly, rapidly, and on a scale not seen since World War II. The wisdom of this policy was reinforced by the ongoing uncertainty of the world situation at the time. Among the problems were revolts by Kurdish and Shiite populations in Iraq, the failure of Iraq to live up to terms of the ceasefire, an impending non-combatant evacuation operation in Ethiopia, and humanitarian relief operations in northern Iraq and Bangladesh.

---

*18Jan91: LtCol C. M. Acree (POW)/CWO-4 G. L. Hunter (POW), VMO-2 OV-10. 28Jan91: Capt M. C. Berryman (POW), VMA-311. 9Feb91: Capt R. A. C. Sanforn (POW), VMA-231 AV-8B. 25Feb91: Capt J. S. Walsh (rescued), VMA-542 AV-8B. 25Feb91: Maj J. J. Small (POW)/Capt D. M. Spellacy (KIA), VMO-1 OV-10. 27Feb91: Capt R. C. Underwood (KIA), VMA-331, MAG-40 (NavCent), AV-8B.

Marines of the 1st Marine Division at mid-day on 27 February 1991, after securing the intersection of the Sixth and Seventh Ring Roads in Kuwait City. They remained at Mission Oriented Protective Posture Level 2 (MOPP 2) in their woodland pattern anti-chemical suits until 1615 that afternoon. The cardboard tube on the right rear part of their vehicle shields an anti-fratricide infrared light beacon. In the distance across the Sixth Ring Road, local inhabitants have unfurled a Kuwaiti flag and are beginning to emerge from their homes. Shortly after this picture was taken, children of a Kuwaiti family came up and sprinkled homemade paper flowers on the Marines. It was one of the first of many spontaneous demonstrations of gratitude.

The defeat of Iraqi forces within the Marines' area of operation was utterly total. Despite the warm welcome of its citizens, there was no pressing reason to keep two Marine divisions in Kuwait. The retrograde operation was conducted in conjunction with defense of Kuwait; as 1st Marine Division departed the Persian Gulf area, 2d Marine Division took over the defense of the force's area of operations. The 2d Marine Division remained in a blocking position south of Al Jahra. General Keys' command group maintained the division command post in the "Junk Yard" area until 30 March when they departed for Saudi Arabia with the 6th Marines. The Tiger Brigade was detached on 23 March.* This left the 8th Marines remaining in Kuwait to continue the defensive mission.

During the retrograde from Kuwait, all elements of I MEF maintained unit integrity. All unit movements were tactical, conducted by echelon, and strictly controlled. Combat readiness and mission preparedness remained high during

*In accordance with Army regulations, Tiger Brigade members were now entitled to wear the patch of the 2d Marine Division on their right shoulder, signifying that they had served in combat as part of that unit.

the flow of forces out of the Gulf. During the realignment of I MEF, the first priority was the reconstitution of operational forces, particularly strategic contingency units, followed by rotation home of units and individuals on a "first in, first out" basis. The first retrograde of I MEF units to Saudi Arabia began on 4 March, when General Myatt shifted 1st Marine Division's command post from Kuwait International Airport back to the old division support area at Manifah Bay. General Boomer reestablished his command post at the "Police Station" back in the industrial city of Jubayl on 5 March. Shortly afterwards, engineers razed the berms of the I MEF compound near Al Khanjar.

General Boomer declared 10 March 1990 to be R-Day, the date the first I MEF units departed from Saudi Arabia. The units "first out" were from I MEF's spearhead formation, the 7th Marine Expeditionary Brigade. Not since 1945 had such a large number of Marines been moved homewards in such a short time. The force's personnel strength went from about 84,498 on 28 February to 19,743 by 16 April.

On 4 March, units of the 5th Marine Expeditionary Brigade began reembarking onto its ships. On 10 March it was relieved of its mission as force reserve and returned to the operational control of Vice Admiral Arthur. The brigade again displayed its versatility during its passage home when it was diverted to Bangladesh to provide humanitarian relief in the aftermath of a disastrous typhoon. The 24th Marine Expeditionary Unit conducted a separate display of force and humanitarian relief effort in Dohuk Province in northern Iraq under control of the Commander-in-Chief, U.S. Forces Europe. The 4th Marine Expeditionary Brigade departed the Gulf region on 13 March.

In addition to defending Kuwait, the force was involved in the restoration of civilian control and humanitarian relief through the activities of 3d Civil Affairs

Iraqi prisoners-of-war being transported to holding facilities in Saudi Arabia on returning logistical vehicle systems (LVSs) of the Direct Support Command's 8th Motor Transport Battalion. The workhorse LVSs logged over one million miles and turned in a remarkable 93 percent serviceability rate.

Group. After handling wounded civilians and wounded EPWs during the campaign, the group augmented the Kuwait relief effort, designated as Task Force Freedom, through civil work projects, local police and security assistance, and convoy support. The force transferred military supplies that could not be returned to the United States to the Kuwait defense forces. The force also cleaned more than 20,000 blankets used by EPWs and gave them to the inhabitants of Kuwait. Volunteers from 3d CAG even helped clean wildlife that had been fouled by the huge oil spill perpetrated by the Iraqis.

Approximately 60 percent of the Marine Corps' ammunition stocks worth $200-$300 million were in theater at the conclusion of combat operations. The safe and orderly reembarking of these assets became a high priority of General Boomer. He also placed great stress on personal safety. The force adopted the motto "Not One More Life" to remind themselves that safety was paramount. The main areas of concern were traffic safety, antiterrorism, material-handling safety, and control of souvenir hunting in Kuwait. Finally all Marines went through a program to prepare them for their return home. Each received a pamphlet which gave counsel on such areas as integration back into family life, drinking, and even sex.

The 1st Service Support Group continued to have responsibility for the Jubayl Vital Area, resupply of forward units, forward recovery operations, and organization for the retrograde. The group reloaded Maritime Pre-Position Squadrons 1 and 3. The Direct Support Command was responsible for moving personnel and equipment from Kuwait, the exploitation of water points northwest of Al Jaber Airfield and Al Khanjar, and the destruction of enemy ammunition, bunkers, and weapons. As part of the last task, the command also recovered dozens of large enemy weapons systems such as artillery pieces, tanks, antiaircraft weapons, and vehicles for intelligence, training, and historical artifact purposes. On 20 March, the Direct Support Command dissolved and reorganized as the 2d Force Service Support Group. General Krulak moved his command post about five kilometers southwest of Mishab on 27 March. The Al Khanjar Combat Service Support Area was abandoned three days later, its seven kilometer-long blastwall berms the sole monument to one of the greatest logistics feats in the history of the Corps. That same day, nomadic groups of Bedouin with herds of sheep, goats, and camels reclaimed their traditional grazing areas nearby. With good highways available along the coast of Kuwait, there was no longer any need of a 241-kilometer sand and dirt main supply route.

Before any item of equipment could be embarked, U.S. Department of Agriculture regulations required that it undergo a rigorous cleaning and inspection. The side roads of the commercial port and the industrial city of Jubayl soon became clogged with lines of vehicles and equipment waiting their turns at wash-down points. After completing this tedious operation, most personnel departed on chartered airliners and transports of the Military Airlift Command from the Jubayl Naval Air Facility. The 1st Marine Division command group departed Jubayl on 29 March and by the end of the month only 8,788 members of the division were still in theater.

The 3d Marine Aircraft Wing performed a stand-down for maintenance on 1 March after its surge effort of the previous six weeks. Four F/A-18 Hornets remained on strip alert for air defense at all times. Teams from Marine Air Control Group 38 took over the operation of Kuwait International Airport until civilian authorities took it over a month later. Eight squadrons returned to the U.S. during March, followed by most of the others in April. General Moore personally flew a Hornet back across the Atlantic, landing at the wing's home base at El Toro, California, on 4 April. The last two line squadrons departed from Shaikh Isa Air Base, Bahrain, on 17 May 1991.

The I MEF headquarters staff also began preparations to return home to Camp Pendleton in California, but not before its commander and major subordinate commanders reported to General Schwarzkopf in person. During a debrief at Jubayl on 21 March, General Schwarzkopf was generous in praise of his Marines. "(Y)ou absolutely executed superbly. You did everything I thought you were going to do, and more." By assigning I MEF the supporting attack, he had given them "the toughest mission on the battlefield." "(W)e had to throw somebody in against the toughest barriers. We had to throw somebody in where the enemy thought we were coming, because that's the only way we could pin the enemy." He thought the breach operation was "a classic job" that would be studied for years to come. On a personal level, he told them "how very, very proud you've made me to be your commander."[51] The feeling was undeniably mutual.

The first I MEF advance parties from the G-1 manpower section departed Saudi Arabia on 26 March. The force's combat replacement regiment transferred more than 1,000 Marines to subordinate commands and then dissolved on 21 March. Its members also assisted the Marine Corps Combat Development Command's battle assessment team under Colonel Clifford L. Stanley from Quantico during its post-combat data gathering activities. This information was processed into the Marine Corps Lessons Learned System.

Lieutenant General Boomer and most of his principal staff left Saudi Arabia on 16 April 1991 via a Marine C-9 aircraft for Camp Pendleton. Returning during the same period were General Brabham and the 1st Force Service Support Group. The 2d FSSG then assumed all combat service support functions for the force. On 21 April 1990 the remnant of I MEF in theater was succeeded by a new entity called Marine Forces, Southwest Asia (MarForSWA), commanded by Major General Norman E. Ehlert, the former deputy MarCent commander in Riyadh. Brigadier General Krulak succeeded him on 31 May. The last units from 2d Marine Division departed on 10 June 1991. Marine combat power in the Gulf was now afloat in the form of expeditionary units that were capable of special operations. Beginning in March, the 13th, 11th, 15th, and 22d MEU(SOC)s successively maintained a presence there during the rest of 1991.

The final phase of the retrograde was the reconstitution of Maritime Pre-Positioning Squadron 2 on 28 July. It became the "ready" squadron to support another Marine expeditionary brigade. Marine Forces, Southwest Asia, itself dissolved on 10 October 1991, as the last Marine combat service support unit departed Saudi Arabia.

After the last Marines were gone from Saudi Arabia, observers noted that the presence of half a million Americans left the Kingdom "remarkably untouched."[52] That would not be the case back in the United States. Without television and with only a few newspapers to inform them of the tremendous amount of popular support of them at home during the conflict, few Marines were prepared for the extraordinary welcoming they received upon their return. For most Marines, that homecoming was the greatest honor bestowed upon them for their service in the Gulf conflict.

Notes

This monograph is one of a series entitled *U.S. Marines in the Persian Gulf, 1990-1991*. For more detailed information concerning major subordinate units of I MEF, the reader is referred to companion monographs by LtCol Charles H. Cureton, -----*: With 1st Marine Division;* LtCol Dennis P. Mroczkowski, -----*: With 2d Marine Division;* and LtCol Ronald G. Brown, -----*: With Task Force Provide Comfort* and -----*: With Marine Forces Afloat*, all to be published by the History and Museums Division, Headquarters Marine Corps. Future monographs also will cover the 3d Marine Aircraft Wing and combat service support elements. For readers who may not have access to the official sources noted above, the author has included selected endnote references of articles in professional journals such as *Marine Corps Gazette* and *U.S. Naval Institute Proceedings*.

1. Benis M. Frank, *U.S. Marines in Lebanon, 1982-1984* (Washington: Hist&MusDiv, HQMC, 1987), pp. 70-105.

2. CG I MEF msg to I MEF dtd 120116Z Aug90.

3. Donald McFarlan, ed., *The Guinness World Book of Records* (New York: Bantam, 1991), p. 218.

4. Department of the Army, *Corps Operations, FM 100-15* (Washington, 13Sep89).

5. See Combined Plan Operation Desert Storm, dtd 16Jan91, for a breakdown of the force relationships.

6. Gen H. Norman Schwarzkopf, USA, and LtGen Walter E. Boomer, USMC, remarks to I MEF commanders and staff during MarCent debriefing to CinCUSCentCom at Jubayl, Saudi Arabia, dtd 21Mar91 (unpublished transcript in LtGen Boomer's possession), hereafter ComUSMarCent Debriefing to CinCUSCentCom, dtd 21Mar91. See also John G. Miller and Brendan M. Greeley, Jr., "Desert Storm: The Marine Commanders," *U.S. Naval Institute Proceedings*, Nov91, pp. 47-80 for interviews with senior I MEF commanders.

7. MajGen Jeremiah E. Pearson III intvw w/author dtd 16Dec90 at Riyadh, Saudi Arabia.

8. Ibid.

9. Melissa Healy and Stanley Meisler, "Perils of Search-and-Destroy Mission in Iraq," *Los Angeles Times*, 22Nov91.

10. The air defense of the force will be more fully discussed in a forthcoming monograph concerning 3d Marine Aircraft Wing in the Persian Gulf.

11. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91.

12. Col James D. Majchrzak intvw dtd Jan91. Col. Majchrzak was then senior I MEF plans officer and head of the Battle Staff Planning Group.

13. MCRSC, *Statistical Summary of Marine Corps Pretrained Individual Manpower Mobilization for Operation Desert Storm*, Final Report dtd 10May91. An additional 727 individuals received orders but were cancelled by HQMC prior to report date.

14. LtCol Mark F. Cancian, "Marine Corps Reserve Forces in Southwest Asia," *Marine Corps Gazette*, Sep91, pp. 35-37.

15. LtCol Ronald G. Brown, "The 24th Marines in the Persian Gulf, 1991" (ms, MCHC, Washington, D.C., Sep91).

16. Quoted in I MEF ComdC, Nov90.

17. See BGen Paul K. Van Riper, "Observations During Operation Desert Storm," *Marine Corps Gazette*, Jun91, pp. 54-61, for an analysis of the process.

18. Col Terrence R. Dake intvw dtd 28Nov91, hereafter Dake intw. Col Dake was Asst C/S G-3 Operations, 3d MAW.

19. Col Robert G. Hill intvws dtd 30Nov90 and 11Jul91. Also Col Charles J. Quilter, "Communications in I MEF, Dec90," (ms, MCHC, Washington, D.C., 1991).

20. CG 1st FSSG ltr to CG I MEF (G-4 Supply), Subj: 1st FSSG Statistical Data from Op Desert Shield and Desert Storm as Requested by the GAO, dtd 13May91 (I MEF files, MCB Camp Pendleton, California). Also information supplied by I MEF G-4 Supply Officer, LtCol T. M. Taylor, 16May91.

21. USCentCom and Joint Forces Theater of Operations, Combined Operation Desert Storm (Combined OPlan), dtd 17Jan91.

22. I MEF (G-2 and Battle Staff Planning Group), briefing chart for CMC brief, dtd 23Dec90.

23. HQMC, *Warfighting, FMFM 1* (Washington, 6Mar89), p. 28.

24. Ibid, p. 29.

25. Author's note taken 15Feb91.

26. ComUSMarCent, USMarCent Operation Plan Desert Storm, dtd 1Jan91.

27. Department of the Army, *Combined Arms Breaching Operations, FM 90-13-1* (Washington, Sep90), outlines the tactics in use up to the time.

28. I MEF (G-2 and Battle Staff Planning Group), briefing chart for CMC brief, dtd 23Dec90.

29. LtCol Franklin D. Lane memo for the record, Subj: Deception Planning, nd, ca. Mar91.

30. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91, p. 15.

31. BGen John H. Admire, "The 3d Marines in Desert Shield," *Marine Corps Gazette*, Aug91, pp. 82-84.

32. 3d MAW OPlan Desert Storm, dtd 15Jan91, Anx N, Air Ops.

33. Dake intvw. The 3d MAW OPlan Desert Storm gives the operational concepts.

34. Video interview and cockpit video recording with the crew on Mission #7171K of 31Jan91 by the author on 12Feb91. For security reasons, their names are omitted. I MEF intelligence officers believed that the III Corps commander was at the meeting, and his death was mentioned in a number of intelligence reports shortly afterwards.

35. Comment by MajGen James M. Myatt at ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91. Criticism of the quality of imagery was nearly universal with Marines, although the laser reproduction process used may have been responsible for apparent graininess.

36. See Capt Robert A. Jones, USMC, "Firefight at Hamaltyat," *Marine Corps Gazette*, Jun91, pp. 30-32 for an account of one such engagement.

37. I MEF, Tiger Team Staff Study: Tiger Team Anti-Fratricide Report (U), dtd 10Feb91.

38. Author's notes.

39. Ibid.

40. LtCol Lynn A. Stuart intvw dtd 29Jan92. LtCol Stuart was then OpsO, 11th Marines. See also LtCol Andrew F. Mazzara, "Artillery in the Desert, 1991, Report #2," *Marine Corps Gazette*, Jun91, pp. 35-36.

41. I MEF, COC Jnl entry #3726 dtd 24Feb91, recd at 0735 from 1/6. Times of events in this narrative are from originator's message. The actual times of events may have been somewhat earlier.

42. I MEF, COC Jnl entry #3801 dtd 24Feb91, recd at 1116 from 513 Bde.

43. I MEF, COC Jnl entry #3736, recd at 0818 from 2nd MarDiv.

44. I MEF, COC Jnl entry #3745, recd at 0900 from 1st MarDiv.

45. Col Randolph A. Gangle intvw dtd 11Jul91.

46. Author's notes.

47. I MEF, COC Jnl entry #4247, recd at 1015 from 1st MarDiv.

48. Molly Moore, "Storming the Desert with the Generals," *Washington Post*, dtd 14Apr91.

49. I MEF, COC Jnl entry #4572, recd at 2041 from 1st MarDiv via DASC.

50. I MEF COC entry #4710. Entry is for a 5th MEB msg, but was identical to that transmitted by I MEF.

51. ComUSMarCent debriefing to CinCUSCentCom, dtd 21Mar91 p. 40-42.

52. Rone Tempest, "Thousands of Strangers Barely Touched Saudi Culture," *Los Angeles Times*, 3Sep91. Other information concerning retrograde operations furnished by Maj John R. Miles, Current Operations Section, HQMC (Code POC), dtd 20Feb92.

Appendix A
I Marine Expeditionary Force
Organization, Personnel, and Major Equipment

I Marine Expeditionary Force
3 September 1990 to 16 April 1991

Commanding General, I Marine Marine Expeditionary Force and Commander, U.S. Marine Forces Central Command	LtGen Walter E. Boomer 3Sep90-16Apr91
Deputy Commanding General, I Marine Expeditionary Force	MajGen John I. Hopkins 3Sep90-7Jan91
	MajGen Richard D. Hearney 8Jan91-16Apr91
Commanding General, I Marine Expeditionary Force (Rear)	MajGen John I. Hopkins 8Jan91-16Apr91
Deputy Commander, U.S. Marine Forces Central Command	MajGen Jeremiah W. Pearson III 4Sep90-17Jan91
	MajGen Norman E. Ehlert 18Jan91-16Apr91
Commander, U.S. Marine Forces Central Command (Forward)	MajGen John J. Sheehan 8Jan91-16Apr91

I MEF STAFF

Chief of Staff	Col Eric E. Hastings 3Sep90-16Apr91
AC/S G-1	Col Alice B. Marshall 3Sep90-7Oct90
	Col Robert K. Redlin 8Oct90-26Mar91
	Maj Randolph S. Lenac 27Mar91-16Apr91

AC/S G-2	LtCol Bruce E. Brunn 3Sep91-24Dec91
	Col Forest L. Lucy 25Dec90-16Apr91
AC/S G-3	Col Charles M. Lohman 3Sep90-13Dec90
	Col Billy C. Steed 14Dec90-16Apr91
AC\S G-4	Col Raymond A. List 3Sep90-16Apr91
AC\S G-6	Col Robert G. Hill 3Sep90-16Apr91

SUBORDINATE COMMANDERS

1st Marine Division	MajGen James M. Myatt 6Sep90-16Apr91
2d Marine Division	MajGen William M. Keys 14Dec90-16Apr91
3d Marine Aircraft Wing	MajGen Royal N. Moore, Jr. 3Sep90-16Apr91
1st Force Service Support Group	BGen James A. Brabham 3Sep90-16Apr91
Direct Support Command	BGen Charles C. Krulak 22Dec90-16Apr91
1st Surveillance, Reconnaissance and Intelligence Group	Col Michael V. Brock 3Sep90-16Apr91
24th Marine Regiment	Col George E. Germann 9Jan91-16Apr91

3d Naval Construction Regiment	Capt Michael R. Johnson, USN 3Sep90-Apr91
1st Radio Battalion	LtCol Thomas A. Flaherty 3Sep90-16Apr91
Headquarters and Service Company	Maj Gary R. Ing 3Sep90-7Mar91
	Maj Glenn Honeycutt 8Mar91-16Apr91

Appendix B
Total I MEF Effective Personnel Strength

	1Dec90	1Jan91	7Jan91	24Feb91	28Feb91
I MEF CE	477	685	842	1,165	1,162
24TH MAR	---	---	---	1,678	1,679
CBT REPL REGT	---	---	---	1,792	1,703
1ST MARDIV	14,183	14,692	17,824	19,515	19,513
2D MARDIV	---	10,575	15,476	16,087	16,078
RLT-5	---	---	---	---	4,747
1ST BDE, 2D AR DIV	---	---	3,939est	4,229	4,226
7th ARMOUR BDE (United Kingdom)	10,275	10,275est	---	---	---
1ST FSSG (+DSC)	4,682	8,386	13,840	13,892	13,866
3D MAW	7,889	10,937	14,559	15,517	15,655
1ST SRIG	1,567	2,336	3,141	3,268	3,267
3D NCR	2,301	2,648	2,612	2,613	2,602
TOTAL IN COUNTRY	41,374	60,534	72,233	79,751	84,498
Total Female Personnel (included in above)	274	678	1,044	1,335	1,332
Total Reserves (included in above)	16	N/A	3,277est	11,703	11,860

Appendix C
Major Equipment

Aviation Total	1Dec90	1Jan91	17Jan91	24Feb91	28Feb91
AH-1J/W	28	28	34	38	44
UH-1N	18	18	30	29	29
CH-46E	24	24	60	59	59
CH-53D	20	20	26	26	26
RH-53D	--	6	6	6	6
CH-53E	15	15	22	24	24
AV-8B	40	40	60	63	62
A-6E	10	20	20	20	20
EA-6B	12	12	12	12	12
FA-18A/C	48	72	72	72	72
FA-18D	0	O	5	12	12
KC-130F/R/T	8	12	15	20	20
OV-10A/D	8	8	8	19	18
UC-12B	1	1	2	2	2

Ground Total	1Dec90	1Jan91	17Jan91	24Feb91	28Feb91
HOW, M109A3	6	12	12	24	24
HOW, M109 (USA)	--	--	24	24	24
HOW, M198	68	100	100	180	180
HOW, M110A2	6	12	12	12	12
GUN, 155MM (UK)	72	72	--	--	--
AAVC7A1	20	40	40	40	40
AAVP7A1	244	463	463	473	473
AAVR7A1	8	17	17	19	19
LAV-AT	22	28	28	48	48
LAV-25	73	101	101	150	150
LAV-R	8	11	11	18	18
LAV-CC	11	18	18	25	25
LAV-L	15	22	22	38	38
LAV-M	10	14	14	22	22
VTR, M88A1	11	16	16	30	30
VTR, M88 (USA)	--	--	21est	21	21
M60A1/A3 TANK	126	195	195	194	192
M60 W/M9	7	13	13	17	17
M1A1 TANK	--	--	58	74	72
M1A1 TANK (USA)	--	--	118est	118	118

CHALLENGER TK (UK)	170	170	--	--	--
M2A2 BRADLEY (USA)	--	--	67est	67	67
M3A2 CAV BRDLY (USA)	--	--	67est	6	6
M113 W/4.2 MTR (USA)	--	--	18est	18	18
M113 C2 CP VEH (USA)	--	--	42est	42	42
M113 W/TOW (USA)	--	--	12est	12	12
M113 APC (USA)	--	--	53est	53	53
M270 MLRS (USA)	--	--	10est	10	10
TOW SYSTEM	218	473	473	525	525
ROWPU	87	132	132	175	175
M9 ARM CBT EXCVTR	--	12	12	30	30

Notes:

"est" means estimated data
UK denotes equipment of the British 7th Armoured Bde
USA denotes equipment of the 2nd Bde, 1st Armored Div, USA.

Index

Abraq al Kibrit, 43
Abu Hadriyah, 31
Acree, LtCol Clifford M., 53
Ad Dammam, 3
Admire, Col John H., 45, 75
Al Ahmadi, 74
Al Jaber Air Base, 15, 19, 88, 89, 90, 91, 93, 94, 98, 101, 104, 110
Al Jahra, 38, 40, 46, 95, 97, 98, 99, 103
Al Jubayl, 3, 65
Al Khafji, 18, 60, 61, 73
Al Khanjar Combat Service Support Base, 55, 56, 70, 71, 86, 90, 101, 109, 110
Al Khanjar Expressway, 101
Al Khober, 6
Al Magwa, 100
Al Manaqish, 39, 43, 74, 78
Al Mishab, 3, 65
Al Qaraah, 68
Al Wafrah Oil Field, 37, 46, 64, 65, 74, 91, 100, 104, 106
Ali Al Salem Air Base, 19, 95, 100, 104
Allen, LCpl Frank C., 62
Amend, Col John F., Jr., 88
Amos, BGen Granville R., 25, 57
An Nasiriyah, 49
An Nuayrihah, 31
Ar Riyadh, 3
Arthur, VAdm Stanley R., USN, 10, 35, 41, 109
Ash Shuaybah, 3, 38, 52
Asleiten, Cdr Ghazi, RSNF, 46

Baghdad Express, 57, 58
Bahrain International Airport, 49
Barry, LtCol Richard M., 60
Bedard, Col Emil J., 62, 93, 94
Beinhart, LtCol Ernest G. III, 46
Bentzlin, Cpl Stephen E., 62
Billiere, LtGen Sir Peter de la, Royal Army, 22
Blue Ridge (LCC 19), 41
1stLt Alexander Bonnyman Jr. (T-AK3003), 6, 30
Boomer, LtGen Walter E., 1, 7, 8, 10, 11, 12, 15, 17, 20, 21, 23, 24, 25, 27, 28, 30, 31, 33, 34, 35, 36, 37, 38, 40, 41, 42, 43, 44, 46, 47, 50, 51, 52, 54, 55, 61, 62, 63, 65, 68, 70, 71, 74, 77, 83, 86, 87, 88, 90, 93, 95, 97, 98, 103, 104, 109, 110, 111

Brabham, BGen James A., Jr., 11, 13, 28, 31, 57, 58, 111
British Army Commands and Units
1st Armoured Division, 21, 33
7th Armoured Brigade, 14, 22, 33
Brock, Col Michael V., 17, 18, 45
Brunn, LtCol Bruce E., 17, 18
Bubiyan Island, 20
Burqan Oil Field, 15, 74, 77, 85, 90, 91, 92, 95, 98
Bush, President George H. W., 1, 21, 30, 49, 104

Camp Gray, 18, 23
Cape Girardeau, 65
Carlsen, Capt Thomas USN, 59
Cordingley, BGen Patrick, Royal Army, 14
Corley, LtCol Max A., 42
Cotto, Cpl Ismael, 62
Cpl Louis J. Hauge Jr. (T-AK3000), 6
Crim, Capt Jerry R. USN, 59
Crooks, Commo Richard A., USN, 44
Cureton, LtCol Charles H., 61
Curtiss (T-AVB 4), 8
Cutler, Lt John USN, 59

Dammam, 44
Davis, Col Jack A., 72
Davis, CWO3 A. R., 77
Davis, Lt Pamela E. USN, 59
Defense Intelligence Agency, 17
Dhahran, 6, 97
Donovan, LtCol Timothy E., 4, 20
Draude, BGen Thomas V., 64

Ehlert, MajGen Norman E., 41, 111

Felix, LCpl Eliseo C., 63
Flaherty, LtCol Thomas J., 32
Flickertail State, 65
Fulford, Col Carlton W., Jr., 3, 75
Fulks, Col James A., 46, 75, 93, 94

Gangle, Col Randolph A., 65, 91
Garrett, Col Larry T., 44
Gerblick, Maj Thomas H., USA, 40
Germann, Col George E., 23, 41
Grubb, LtCol William C., 32
Gulf Princess, 28
Guwilliams, LtCol Ronald G., 23

Hafar al Batin, 24
Hansen, Col Robert W., 29, 30
Hastings, Col Eric E., 1, 42, 55
Hearney, MajGen Richard D., 41, 55, 71, 88, 93, 94, 101, 103, 104
Hendrickson, Col Gene D., 63
Hiers, Capt H. Thomas, 59
Hill, Col Robert G., 4, 26, 27, 50, 55, 68, 70
Hodory, Col Richard W., 75
Hopkins, MajGen John I., 3, 6, 7, 14, 40
Horner, LtGen Charles A., USAF, 11, 19, 50, 52
Howard, Col Patrick G., 77
Hunter, CWO-4 Guy L., Jr., 53
Hussein, Saddam, 1, 17, 46, 49

Ing, Maj Gary R., 70
Iraqi Commands and Units
14th Infantry Division, 15, 78, 80
18th Infantry Division, 90
3d Armored Brigade, 91
3d Armored Division, 15, 94
5th Mechanized Division, 65
6th Armored Division, 15
7th Infantry Division, 15, 78, 80
8th Infantry Division, 15
8th Mechanized Brigade, 91
29th Infantry Division, 15, 75, 78, 80
42d Infantry Division, 15, 75
III Corps, 15, 45, 94, 99
IV Corps, 1st Mechanized Division, 15

Jenkins, LCpl Thomas A., 62
Jenkins, MajGen Harry W., Jr., 8, 21, 35
Johnson, Capt Michael R., USN, 13, 59
Johnson, LtCol Francis A., 23
Ju'aymah, 4

Jubayl, 3, 4, 6, 8, 13, 14, 18, 24, 28, 30, 31, 40, 42, 44, 57, 58, 65, 92, 97, 103, 109, 110
Jubayl Naval Air Facility, 13

Keenan, LtCol John A., 97
Keys, MajGen William M., 31, 34, 41, 54, 78, 88, 93, 95, 99, 108
Khafji, 51, 62
Khalid King, 87
Khalid, Prince, 44, 49
Khalifa bin Ahmad Al Khalifa, Shaikh, 13
Khanjar, 58, 59
Kibrit, 43, 44, 55, 56, 59, 64, 65, 68, 91
King Abdul Aziz Naval Base, 13, 49, 97
Knowles, 1stLt Brian G., 103, 104
Krulak, BGen Charles C., 31, 32, 43, 55, 56, 90, 101, 110
Kurth, LtCol Michael M., 25, 26, 98
Kuwait City, 21, 38, 66, 74, 83, 94, 97, 101, 103, 104, 106, 108
Kuwait International Airport, 19, 94, 98, 100, 103, 104, 111

Lane, LtCol Franklin D., 39
Linderman, LCpl Michael E., Jr., 62
List, Col Raymond A., 28, 29, 54, 55
Livingston, Col Lawrence H., 78
Lohman, Col Charles M., 4, 17, 20, 21, 39, 62, 74, 93
Lucy, Col Forest L., 33, 55
Lumplins, LCpl James H., 62

Magwa Oil Field, 101
Maheny, Col John M., 7
Majchrzak, Col James D., 20, 21, 34
Mallory Lykes, 44
Manaqish, 68, 75, 88
Manifah Bay, 14, 23, 41
Marine Corps Commands and Units
  I Marine Expeditionary Force, 1, 4, 6, 7, 9, 10, 12, 13, 14, 20, 21, 23, 22, 25, 29, 31, 37, 38, 39, 40, 41, 43, 44, 47, 52, 60, 61, 62, 63, 64, 68, 70, 72, 73, 74, 75, 78, 83, 85, 90, 91, 94, 97, 98, 103, 104, 108, 109, 111
  II Marine Expeditionary Force, 21
  III Marine Expeditionary Force, 21
  1st Marine Expeditionary Brigade, 8
  4th Marine Expeditionary Brigade, 8, 10, 21, 24, 29, 34, 46, 109
  5th Marine Expeditionary Brigade, 10, 47, 65, 90, 100, 109
  7th Marine Expeditionary Brigade, 3, 6, 7, 14, 20, 109

11th Marine Expeditionary Unit (SOC) 111
13th Marine Expeditionary Unit (SOC), 8, 111
15th Marine Expeditionary Unit (SOC), 111
22d Marine Expeditionary Unit (SOC), 111
24th Marine Expeditionary Unit (SOC), 109
1st Marine Division, 14, 23, 24, 30, 33, 37, 38, 41, 44, 60, 63, 75, 78, 79, 80, 82, 85, 86, 88, 91, 92, 93, 94, 95, 98, 100, 106, 108, 109, 110
2d Marine Division, 21, 31, 33, 34, 38, 42, 54, 59, 64, 75, 77, 80, 86, 88, 91, 92, 93, 94, 95, 98, 100, 101, 103, 104, 108
4th Marine Division, 22
3d Marines, 44
6th Marines, 78, 80, 86, 88, 99
7th Marines (Reinforced), 3
8th Marines, 78, 80, 92, 98, 100, 108
10th Marines, 85, 94
11th Marines, 85, 92
24th Marines, 14, 22, 40, 65, 72
Regimental Landing Team 5, 65, 72, 90, 101, 104, 106
Battalion Landing Team 2/5, 101
Battalion Landing Team 3/1, 91, 101
Battalion Landing Team 3/5, 101
1st Battalion, 12th Marines, 60
1st Battalion, 24th Marines, 23
2d Assault Amphibian Battalion, 86
2d Battalion, 11th Marines, 101
2d Battalion, 24th Marines, 23, 101
3d Battalion, 24th Marines
3d Battalion, 9th Marines, 14
8th Motor Transport Battalion, 57, 109
Task Force Cunningham, 25, 26
Task Force Grizzly, 75, 85, 88, 93, 94, 98, 99
Task Force Papa Bear, 75, 82, 100, 101
Task Force Ripper, 75, 82, 85, 88, 98, 100, 106
Task Force Shepherd, 60, 61, 62, 100, 101, 103
Task Force Taro, 75
Task Force Troy, 64, 65, 68, 91
Task Force X-ray, 88
Company B, 4th Tank Battalion, 92
Company D, 3d Light Armored Infantry Battalion, 106
Company D, Task Force Shepherd, 60
Company G, 2d Battalion, 7th Marines, 92
Battery F, 2d Battalion, 12th Marines, 60
2d Marine Aircraft Wing, 21, 31, 41
3d Marine Aircraft Wing, 8, 10, 12, 14, 19, 25, 26, 31, 37, 42, 49, 52, 56, 83, 98, 104, 106, 107, 111
4th Marine Aircraft Wing, 22

Marine Air Control Group 38, 83, 111
Marine Air Refueling/Transport Squadron 452, 54
Marine Aircraft Group 11, 49, 50, 54, 83, 97
Marine Aircraft Group 13, 49, 97
Marine Aircraft Group 16, 44, 101
Marine Aircraft Group 26, 44, 56, 57, 101
Marine Aircraft Group 50, 65, 91, 101, 106
Marine Aircraft Group 70, 4, 14, 19
Marine Aerial Refueling/Transport Squadron 352, 58
Marine All Weather Fighter Attack Squadron 121, 54
Marine Attack/Electronic Warfare Squadron 2, 77
Marine Light Helicopter Attack Squadron 369, 25, 98
Marine Observation Squadron 2, 53
2d Light Anti-Aircraft Missile Battalion, 83
2d Low Altitude Air Defense Battalion, 83
3d Light Anti-Aircraft Missile Battalion 83
3d Low Altitude Air Defense Battalion, 83
1st Force Service Support Group, 11, 28, 30, 31, 40, 57, 107, 110, 111
2d Force Service Support Group, 21, 31, 110, 111
4th Force Service Support Group, 22
Brigade Service Support Group 5, 65, 91
Direct Support Command, 43, 55, 56, 57, 74, 78, 90, 101, 110
1st Air and Naval Gunfire Liaison Company, 32, 45, 86
3d Air and Naval Gunfire Liaison Company, 32
1st Radio Battalion, 39, 77
1st Surveillance, Reconnaissance and Intelligence Group, 17, 24, 31, 45, 60, 95
2d Surveillance, Reconnaissance and Intelligence Group, 31
3d Civil Affairs Group, 7, 65, 66, 109
4th Civil Affairs Group, 65
4th Division-Wing Team, 22
Combat Replacement Regiment, 72
Mauz, VAdm Henry H., USN, 10, 21, 25, 35
McKissock, Col Gary S., 55
Mina Saud, 68
Mishab, 3, 10, 40, 41, 43, 44, 55, 56, 57, 59, 90
Missouri (BB 63), 86, 95, 100
Moffett, Col John W., 23
Mongrella, Sgt Garett A., 62
Moore, MajGen Burton, USAF, 94
Moore, MajGen Royal N., Jr., 10, 12, 14, 19, 31, 42, 50, 53, 57, 90, 111
Mutla Ridge, 97, 98, 99
Myatt, BGen James M., 14, 41, 46, 75, 88, 92, 95, 101, 109
Myers, LtCol Clifford O., 60

O'Connor, Maj John P. (Ret.), 71

Pack, Sgt A. A., 78
Pagonis, LtGen William G., USA, 28
Palm, Col Leslie M., 78
Parkison, Capt Ralph F., 92
Pearson, MajGen Jeremiah W. III, 11, 12, 13, 41
PFC James Anderson Jr. (T-AK3002), 6
PFC William B. Baugh Jr. (T-AK3001), 6
Powell, Col Alexander W., 4
Pvt Harry Fisher (T-AK3004), 6

Qahtani, Col Fahad al, 66
Qurna, 49

Ras Al Mishab, 3, 25
Ras Al Qulayah, 68
Ras az Zawr, 90
Ras Tannurah, 4, 28
Redlin, Col Robert K., 21, 55
Richard, Col Ronald G., 54
Rietsch, Col Manfred A., 4, 97
Riyadh, 8, 13
Robben, Col Joseph W., Jr., 13
Rowe, MajGen Peter J., 47, 65

Safaniyah (Ras As Saffiniyah), 40, 41, 42, 51, 66
Saleh, MajGen, 19
Saudi Army Units
  2d SANG Brigade, 10
  8th Brigade of the Royal Saudi Land Forces, 44
  10th Brigade of the Royal Saudi Land Forces, 44
  Saudi Arabian National Guard, 24
Saudi Minister of Defense, 44
Scheuller, LtCol Anthony H., 54
Schmidt, Col Larry S., 80
Schopfel, Col William H. III, 47, 95
Schroeder, PFC Scott A., 62
Schwartzenegger, Arnold, 27
Schwarzkopf, Gen H. Norman, USA, 3, 4, 7, 9, 10, 13, 20, 21, 22, 24, 29, 33, 34, 35, 36, 37, 39, 41, 46, 49, 63, 65, 66, 73, 74, 88, 94, 104, 107, 111
Shaibah, 49

Shaikh Isa Air Base, 13, 14, 49, 50, 51, 111
Sheehan, MajGen John J., 41
Shores, LtCol Howard P. II, 77, 79
Shotwell, Col John M., 73
Small, Maj J. J., 88
Smith, MajGen Rupert, Royal Army, 22
Snyder, LCpl David T., 62
Spellacy, Capt D. M., 88
Spencer, SgtMaj Rafe J., 42
Stanley, Col Clifford L., 111
Stark (FFG 31), 19
Steed, Col Billy C., 42, 55, 62, 86, 93
Stephenson, LCpl Dion J., 62
Sultan, MajGen Al (Al-Mutairi), 32, 45, 103
Sultan bin Abdul Aziz, LtGen Prince Khalid bin, 10
Sylvester, Col John B., USA, 33, 34, 99

Tallil, 49
Tanajib, 44, 59, 66, 97
Taylor, LtCol Timothy M., 28, 29
Tripoli (LPH 10), 65

U.S. Air Force Command and Units
  Nevada Air National Guard, 192d Tactical Reconnaissance Squadron, 53
  35th Tactical Fighter Wing, 53
U.S. Army Commands and Units
  11th Air Defense Signals Battalion, 27
  240th Quartermaster Battalion, 58
  3d Civil Affairs Group, 27
  403d Civil Affairs Group, 27
  800th Military Police Brigade, 106
  8th Psychological Operations Task Force, 40
  XVIII Airborne Corps, 24, 27
  U.S. Army Tiger Brigade, (1st Brigade, 2d Armored Division), 33, 34, 78, 80, 91, 95, 99, 106, 108
U.S. Navy Commands and Units
  Maritime Pre-Positioning Squadron 1, 6, 31, 100
  Maritime Pre-Positioning Squadron 2, 6, 30, 111
  Maritime Pre-Positioning Squadron 3, 6, 8, 110
  Third Naval Construction Regiment, 50, 59, 74
Umm Gudair, 46, 78, 87

Wafrah, 77
Walker, LCpl Daniel B., 62
Waller, LtGen Calvin A. H., USA, 46
Walsh, Capt J. S., 88
West, Col Randall L., 65, 91
Whitlow, Col James L., 97
Williams, Col Michael J., 44
Wisconsin (BB 64), 86
Woodhead, Col John A. III, 32
Wright (T-AVB 3), 8

Yanbu, 6
Yeosock, LtGen John G., USA, 23, 24, 34, 42

DS 79.72 .Q6 1993
Quilter, Charles J.
U.S. Marines in the Persian Gulf, 1990-1991

FEB 11 1999
DEC -3 2004
NOV 23 2007
NOV -3 2006
MAY 06 2010

PLEASE KEEP THIS CARD IN THE BOOK POCKET.
THIS BOOK IS DUE ON THE LATEST DATE STAMPED.
PLEASE KEEP THIS CARD IN THE BOOK POCKET.
THIS BOOK IS DUE ON THE LATEST DATE STAMPED.

FEB 05 1996

MARINE CORPS UNIVERSITY LIBRARY
2040 Broadway Street
Quantico, VA 22134-5107

The device reproduced on the back cover is the oldest military insignia in continuous use in the United States. It first appeared, as shown here, on Marine Corps buttons adopted in 1804. With the stars changed to five points this device has continued on Marine Corps buttons to the present day.